PB-233 878

WICHITA'S MUNICIPAL SOLID WASTE MANAGEMENT STUDY

Applied Management Sciences, Incorporated

Prepared for:

Environmental Protection Agency

1973

DISTRIBUTED BY:

NTIS
National Technical Information Service
U. S. DEPARTMENT OF COMMERCE
5285 Port Royal Road, Springfield Va. 22151

BIBLIOGRAPHIC DATA SHEET

1. Report No.
EPA/530/SW-73c

2.

PB 233 878

4. Title and Subtitle
Wichita's Municipal Solid Waste Management System: A Case Study

5. Report Date
1973

6.

7. Author(s)

8. Performing Organization Rept. No.

9. Performing Organization Name and Address

Applied Management Sciences
962 Wayne Avenue
Silver Spring, Maryland 20910

10. Project/Task/Work Unit No.

11. Contract/~~Grant No.~~
68-03-0041

12. Sponsoring Organization Name and Address

U.S. Environmental Protection Agency
Office of Solid Waste Management Programs
Washington, D.C. 20460

13. Type of Report & Period Covered
final

14.

15. Supplementary Notes

16. Abstracts

This study examines the solid waste collection and disposal system in Wichita, Kansas. The background of the system, including location, geography, demography, climate, form of government, and the solid waste management agencies is described, and the characteristics of the system, including the services, equipment , and finances are discussed.

17. Key Words and Document Analysis. 17a. Descriptors

Waste disposal, urban areas

17b. Identifiers/Open-Ended Terms

Reproduced by
NATIONAL TECHNICAL
INFORMATION SERVICE
U S Department of Commerce
Springfield VA 22151

17c. COSATI Field/Group

18. Availability Statement

19. Security Class (This Report)
UNCLASSIFIED

20. Security Class (This Page)
UNCLASSIFIED

21. No. of Pages
98

22. Price
8.00-1.45

This report has been reviewed by the U.S. Environmental Protection Agency and approved for publication. Approval does not signify that the contents necessarily reflect the views and policies of the U.S. Environmental Protection Agency, nor does mention of commercial products constitute endorsement or recommendation for use by the U.S. Government.

An environmental protection publication (SW-73c)
in the solid waste management series

FOREWORD

Solid waste management systems are an integral part of the environment of nearly every citizen in the United States. Yet until recent years, these systems have not received the attention other visible residential services have enjoyed. This historical neglect has resulted in systems which may not be cost-effective, especially with respect to the rising cost trends encountered in solid waste management activities. These trends arise from two principal factors:

- Environmentally sound disposal methodology is being enforced or strongly encouraged; as a result, disposal sites and needed equipment are now expensive to procure and operate.
- The collection function is highly labor intensive. Thus, the costs of unskilled labor, which have been rising to meet socioeconomic demands, have had enormous impacts on local agency budgets.

This rise in cost pressure has forced all levels of governmental organizations to consider more closely the management and costs of solid waste management activities.

Because efforts to upgrade solid waste management practices are in their infancy, there is still an obvious lack of data bases for evaluative and comparative analyses. This case study is one in a series of case studies of solid waste management systems which has been conducted under the sponsorship of the Office of Solid Waste Management Programs, U. S. Environmental Protection Agency. Kenneth Shuster and Cindy McLaren served as EPA project officers on the case study reported herein. The purpose of these case studies is to fill in this data gap with actual case histories of how cities are handling their solid waste problems.

Concerned agencies at all government levels, as well as private firms, will be able to assess information of the following types:

- The management and operating characteristics of public sector solid waste management systems.
- The institutional forces which give rise to these characteristics.

- Those techniques that have been or are being applied to enhance the measures of productivity, aesthetics, level of service, and environmental control.

These agencies and firms can then use these comparisons to upgrade their systems according to the norms achieved in other cities of similar size, geographical location, and operational and institutional characteristics.

--ARSEN J. DARNAY
Deputy Assistant Administrator
for Solid Waste Management
Office of Solid Waste Management Programs

TABLE OF CONTENTS

Chapter **Page**

1 INTRODUCTION 1

2 SYSTEM DESCRIPTION ABSTRACT 4

3 FINDINGS AND CONCLUSIONS 8

4 BACKGROUND OF THE SYSTEM 11

4.1: Location, Demography, Climate, and Economic Base 11

4.2: Form of Government and Organization 13

4.2.1: Form of Government 13
4.2.2: Organization 14

4.3: Solid Waste Management History 17

4.4: Agencies Impacting the Solid Waste Management System 19

4.4.1: State Level Agencies 20
4.4.2: Local Level Agencies 20

5 SOLID WASTE MANAGEMENT SYSTEM CHARACTERISTICS . . 22

5.1: Collection Activities of the Sanitation Division 22

5.1.1: Duties and Level of Service 23
5.1.2: Manpower and Equipment Allocation 27
5.1.3: Efficiency and Productivity 27

5.2: Quality of Service 35

5.3: Labor Management Relations 37

5.4: Low Income Areas and Residents 43

5.5: Disposal Function - Present and Planned . . . 44

5.6: Equipment Description 52

5.6.1: Financing and Cost 55
5.6.2: Vehicle Maintenance Policies 56
5.6.3: Vehicle Replacement Policies 59

5.7: Financial Aspects of the Wichita Solid Waste Management System 59

5.7.1: Sources of Revenue 60
5.7.2: Expenditure 67

APPENDICES 72

TABLE OF CONTENTS (Cont.)

Chapter | Page

Appendix A: Summary from Environmental Resource Task Force 73

Appendix B: Solid Waste Ordinance 78

LIST OF ILLUSTRATIONS

Figure		Page
1	Data Sources and Information Types	3
2	Wichita Government Organization	15
3	Sanitation Division Organization	16
4	Environmental Resource Task Force Route Study . .	33
5	Benefit Package Structure	39
6	Comparative Average Wages	40
7	Disposal Site Locations	45
8	Brooks (No. 1) Disposal Fee Schedule	47
9	Chapin (No. 2) Disposal Fee Schedule	48
10	Disposal Function - 1972 Activities and Revenues .	51
11	Preventive Maintenance Worksheet	57
12	Collection Revenues for 1972	61
13	Monthly Report for December 1972	68

LIST OF TABLES

Table	Title	Page
1	Collection Abstract	6
2	Disposal Abstract	7
3	Residential Refuse Service Rate Schedule	24
4	Manpower and Equipment Allocation	28
5	Efficiency/Productivity Data for Wichita	29
6	Shift History of Customer Levels	36
7	Historical Collection Force Wage Levels	41
8	Sanitation Division - Refuse Disposal - Fleet Directory	49
9	Disposal Site Use Frequency by City Crews	50
10	Collection Fleet Composition	54
11	Packer Body Descriptions	55
12	Collection Revenue History	62

LIST OF TABLES (Cont.)

Table	Title	Page
13	Quarterly Collection Fee History	63
14	Disposal Revenue History	66
15	Collection Function Expenditures - 1965 to 1972 . .	69
16	Disposal Function Expenditures - 1965 to 1972 . . .	71

1

INTRODUCTION

In Wichita, Kansas, the solid waste management system is comprised of both the public sector and numerous private sector firms operating in an environment of strong competition for customers. Although this situation is found in both the collection and disposal functions, it is by far the most evident in the former. This arrangement has had serious effects in both the general quality of service and the level of system efficiency in the city.

The public sector operation collects approximately thirty percent of the city residents that have a scheduled collector. The private sector serves the remaining regular customers. A recent survey found that about 10 percent of the city residents received no collection service at all and performed their own solid waste "management". There is considerable evidence to show that this 10 percent either stores its waste or disposes of it illegally. The actual collection routing practiced by both sectors is very inefficient because of the need to either add or drop customers as they shift collectors.

The disposal function is primarily the public landfill operation in the vicinity of the city. Private sector firms can and do operate their own disposal sites but these are not convenient to the majority of the crews working residential routes. Disposal appears to be adequately performed and does not represent any significant problem.

The State of Kansas has required each of its counties to develop a solid waste management plan by 1975. Sedgwick County, containing the City of Wichita, has this responsibility but is likely to share it with the city. Such a plan is quite likely to have a significant impact on the solid waste management system as it exists today.

Figure 1 presents the titles of the people either interviewed during the site visit or contacted in subsequent telephone calls. The types of information obtained are also indicated. Tape recordings of conversations were made after obtaining the permission of the interviewee.

The structure of this report consists of five chapters and a number of appropriate appendices. Chapter 2 synopsizes the system for those readers who are interested only in the parameters of the city and the collection and disposal operations. Chapter 3 presents our findings and identifies potential problem areas. Chapter 4 is a description of the city in terms of those parameters which affect solid waste management operations. Also included in this chapter are descriptions of the different public and private sector agencies on all levels found to impact the system. Finally, Chapter 5 is an in-depth description of the solid waste management system as a whole. All aspects of the system are presented and, wherever appropriate, tabular data is included in the text.

TITLE	DATE	INFORMATION TYPE
Director, Department of Public Works	19 June	Background of Wichita solid waste management system
Director(former), Sanitation Division	19 June	Problem areas in solid waste management system
Controller, Department of Administration	20 June	Wichita fiscal data
Model Cities Employee	20 June	Model Cities interest in solid waste management
Health Officer, Kansas Board of Health	20 June	State impact on solid waste management
Director, Personnel Division, Department of Administration	20 June	Labor-Management relations
Representatives, Wichita Chamber of Commerce	21 June	Chamber interest in solid waste management
Director, Environmental Health Division Wichita-Sedgwick County Department of Community Health	21 June	Problem areas in Wichita solid waste management system
Director (current), Sanitation Division	Periodic Telephone Calls	Operational data on solid waste management system

FIGURE 1: DATA SOURCES AND INFORMATION TYPES

2

SYSTEM DESCRIPTION ABSTRACT

City: Wichita, Kansas

Contacts:
Ray W. Bruggeman - Director, Department of Public Works
Dale Garst - Director (former), Sanitation Division, Department of Public Works
Lyle Botkin - Controller, Division of Auditing and Accounts, Department of Administration
Joe Dowell - Model Cities Agency
Jim Current - Kansas Board of Health
Samuel S. Williamson - Director, Personnel Division, Department of Administration
Arthur E. Mahoney and Fred Wendt - Wichita Chamber of Commerce
James Aiken - Director, Environmental Health Division, Wichita - Sedgwick County Departmental Community Health
Gene Fey - Director (current), Sanitation Division, Department of Public Works

Dates of Visit: 19 June - 21 June, 1973

Population Demography:

Date	Total	White	Other
1970	276,554	246,943	29,611
1960	254,798	-	-
1950	-	-	-

Area:	90.74 square miles
Density:	2,900 people per square mile
Mileage:	Roads - NA
	Alleys - NA
Collection:	Table 1

Miscellaneous: The municipal solid waste management system competes with the private sector in the city except that it is prohibited from soliciting for customers. It is regarded as a semi-public utility and must pay its own way. Because of the competitive nature of the public/private system, productivity is low and waste accumulation problems do exist in some sectors of the city. The Wichita-Sedgwick County Department of Community Health has taken an active interest in local solid waste management and has offered (and supported) a number of modifications to the current "non-system".

Disposal: Table 2

Miscellaneous: Like the collection function, the disposal function operates on a pay-as-you-go basis - but more successfully because of the limited competition in this activity. The operation is self-supporting and appears to be run at reasonable efficiency, as calculated operating costs were $1.47 per ton in 1972.

TABLE 1: COLLECTION ABSTRACT

Collection Function / Collection Variables	Suburban Mixed Refuse		CBD Commercial	Dempster Dumpster
	Residential	Commercial		
Number of Routes	22		2	1
Crew Size	18 with 2 men 4 with 3 men		2	1
Frequency of Service	1/week	1/week	5/week	2/week
Point of Collection	Back yard	Adjacent to premises		
Method of Collection	Carry out	Carryout and hoist-type container		Carry off
Stops	22,773	607	122	25
Service Limitations	Two levels- Reg. Serv.= 5 cans Lim. Serv.= 1 can	None		
Incentive System	None			
Fund Source	User Fee			
Tonnage (Annual)	38,604	6,006	4,435	858
Wage Scale (hourly)	Driver - $3.05 Helper - $2.73			
Unions	None			
Annual Cost	$646,753.36		$53,896.11	$13,474.03
Comments	Low productivity at 213 stops per crew per day. Commcercial stops are collected along residential routes		Low productivity for a CBD collection at 67 stops per crew per day	Transfer system using a 40 yard roll off at the Municipal Garage

TABLE 2: DISPOSAL ABSTRACT

Disposal Data / Disposal Site	1	2
Type	Sanitary Landfill and Brush Burning Site	Sanitary Landfill
Capacity	240 acres total; 160 acres remaining	180 acres; 15 acres remaining
Real Loading	246,836 Tons per year[1]	
Expected Lifetime	8 years	1 year
Operating Costs	$363,373.00 per year[2]	
Start-up Costs	N/A	N/A
Location	Brooks, 41st St. N. and West Street	Chapin, 3800 S. Hydraulic
Comments:	Not too heavily used because of its relative distance for most public and private sector crews. Open burning of brush is currently performed and modern methods for controlled combustion are being closely examined.	Very heavily used because of its convenience to both public and private sector crews. A new site is being sought in the vicinity of this site.

[1] 1972 Loading

[2] 1972 costs

3

FINDINGS AND CONCLUSIONS

Wichita is one of the few large cities which has failed to establish the institutional structure necessary to administer a city-wide solid waste management system. One of the factors behind this situation is the prevailing point of view that services which can be performed both adequately and economically by the private sector should not be impacted by public sector competition. This rule has been strictly observed and, in fact, the private sector enjoys several competitive advantages over the public sector solid waste management system.

The present system of a mix of public and private crews randomly collecting customers in the city has not resulted in an adequate and economical solid waste system. Approximately 10 percent of the city residents have no solid waste collection service at all: collection is not mandatory in Wichita. Furthermore, the service is not complete: few bulky items are collected by either public or private crews. These two findings show that the system is far from adequate. Furthermore, the system is far from economical because route overlap is extensive and crew productivity is low.

These findings appear only recently to have attracted the attention of local officials in a position to take action. A nominal disbursememt from Revenue Sharing funds will enable the public sector collection operation to serve approximately 3,000 families who cannot afford to pay for the service. However, this is far short of the required expansion of the collection function. Further, it may invite claims of inequity from private sector collectors that would prefer to expand their operations at the expense of public funds.

The public sector solid waste management operation has survived for almost thirty years in the economic and political climate of Wichita. The effects of the local environment on the characteristics of the system are clearly evident. The equipment is old and replaced only when necessary, the workforce is maintained at the minimum level required to perform, and the management is always struggling to keep the routes as efficient as possible. It is barely a break-even operation and, until the last year, appeared to be losing regular service customers at a slow but constant rate. The decline in "regular volume" service units seems to have been halted in 1972 and this service experienced a slight increase in 1973. To compensate for the loss of revenue and rise in costs, periodic rate increases are necessary - which further serves to reduce the number of customers. It is a vicious cycle and management hopes to break it only by providing better service than the private sector. This choice appears to be the only option currently available to the public sector operation.

To some extent, the public sector disposal operation is not bound by the same constraints. Presently, it is self-supporting and does generate sufficient excess revenues to expand its operations as required and to maintain adequate disposal machinery. The reason for this higher level of success is that there is little competition in the disposal arena. Economies of scale require that large operations be maintained which effectively precludes the entry of small firms into the marketplace. Furthermore, the city has been surprisingly effective in obtaining disposal sites convenient to most of the public and private crews. Whether these conditions will continue to exist is presently a question of considerable concern. The most frequently used disposal site is nearing the end of its useful life and a new sight is being actively sought.

The conclusion to be reached from this case study is that the roles of the public and private sector solid waste management organizations must be clearly defined in any given metropolitan area before an adequate and economical system can operate. Along with this specification, there should be one additional factor: all of the residents of a metropolitan area must receive solid waste collection service, regardless of the ability to pay or uncollected waste will invariably become a public blight.

4

BACKGROUND OF THE SYSTEM

Wichita, Kansas is located 161 miles southeast of the exact center of the continental United States at the confluence of the Arkansas and the Little Arkansas rivers. The Wichita Standard Metropolitan Statistical Area is comprised of the city, surrounding Sedgwick County, and Butler County to the east. In 1970, the total population of this area was 389,352 persons, and, of these, 276,554 lived within the corporate limits of the city. Although Sedgwick County is smaller than neighboring Butler County, it has about twice the population and is considerably more suburban.

4.1: Location, Demography, Climate, and Economic Base

The City of Wichita lies in the southeast quadrant of Kansas at an elevation of 1280 feet. The topography of the area is flat: Kansas is a great plains state. The city has an area of 90.74 miles with a moderately low population density of 2,900 people per square mile. The road grid pattern is regular and has an east-west/north-south orientation. Because of the availability of land, the major thoroughfares are well designed and constructed and do not appear to give rise to major congestion problems.

Wichita is the largest city in the state even though the Kansas City Mo.-Kansas urban area has a significantly greater population. In 1970, the population was 276,554 which ranked the city as the 51st largest city in the nation, but by 1973, there had been a drop of nearly 13,000 people. The non-white fraction is about 10.7 percent for the city alone and 8.9 percent if Sedgwick County is included.

The region surrounding Wichita has an average annual rainfall of less than thirty inches, and there are between 60 to 65 days when the daily temperature exceeds 90° Fahrenheit. However, the climate has four seasons and the mean annual temperature is 57° Fahrenheit. These factors indicate that conditions for outdoor work are ideal for the greatest fraction of a year but may occasionally degrade during the extremes of the winter and summer months.

The economic base of Wichita results from the development of the area's available natural resources and the long residency of the commercial aircraft industry. This base also provides an explanation of the extent of the political and commercial conservatism which prevails in the city. The city is not well diversified in the commercial sense, and is critically dependent on the viability of its unbalanced economic mix. There is no question but that this problem is clearly recognized and respected. Because of the significant dependence on the aircraft industry, the local economy is extremely sensitive to both economic indicators and Federal Government policies. Wichita, like Seattle, had an unemployment rate of nearly 13 percent during the mild recession and aerospace funding cutback four years ago. Since this extremely hard lesson, the city has expended considerable efforts to attract new industry to the area and the Wichita Chamber of Commerce is an integral tool in this endeavor.

4.2: Form of Government and Organization

4.2.1: Form of Government

Since the early years of this century, Wichita has had a Commission-Manager form of government. The Wichita Board of City Commissioners consists of five members elected at large for four-year terms which overlap so that either two or three members are selected each two years. The bi-annual election is held the first Tuesday in April of odd-numbered years.

To serve as Commissioner, one must be a citizen of the United States, not less than 25 years of age, a qualified voter, and a resident of the city for at least three years preceding election.

Titles and duties of all Commissioners are equal, except that each year the Commission selects one of its members to serve as Mayor and another as Vice Mayor. The Mayor presides at City Commission meetings and acts as official head of the municipal government on formal occasions. In event of his absence, the Vice Mayor assumes these duties.

The Commissioners meet each Tuesday morning at nine in the Commission Room of the City Building. Meetings are conducted from agenda, published on the Friday preceding the meeting. Citizens may speak to items on the agenda and at designated times at public hearings, and are invited to attend the Commission meetings.

The City Manager of Wichita serves at the pleasure of his employer, the City Commission. His responsibilities include the administration of the conventional aspects of the city government and, in addition, the operation of the Century II Civic-Cultural Center. However, the City Manager is not responsible for the administration of the Library, the Art Museum, the Park and Airport and, curiously enough, the Metropolitan Transit Authority and the Urban Renewal Agency. The City Commission directs the affairs of these organizations by the appointment of independent boards. This split of the power base leaves the philosophy of and methodology for city growth patterns to the commissioners who are directly responsible to the electorate.

4.2.2: Organization

The organization of the city government is illustrated in Figure 2. The Sanitation Division is part of the Public Works Department which is ultimately directed by the City Manager. Both solid waste collection and disposal are performed by the Sanitation Division, and the structure of the organization is presented in Figure 3. Furthermore, the division manages its own accounting requirements and maintains its collection equipment.

The Sanitation Division is regarded as a municipal function that operates on a strict pay-as-you-go basis. With only two exceptions, it resembles a private sector solid waste firm to the extent that it is not publicly supported and depends for its existence on user fees.

However, the two essential differences are critical factors in the viability of the operation. First, although the division must compete with the private sector for business, it is prohibited by the City Commission to solicit for customers. Second, the division must bear the higher costs of having a public employee wage and benefit structure. As will be pointed out, these are almost unbearable constraints and have not resulted in an effective city wide solid waste management system.

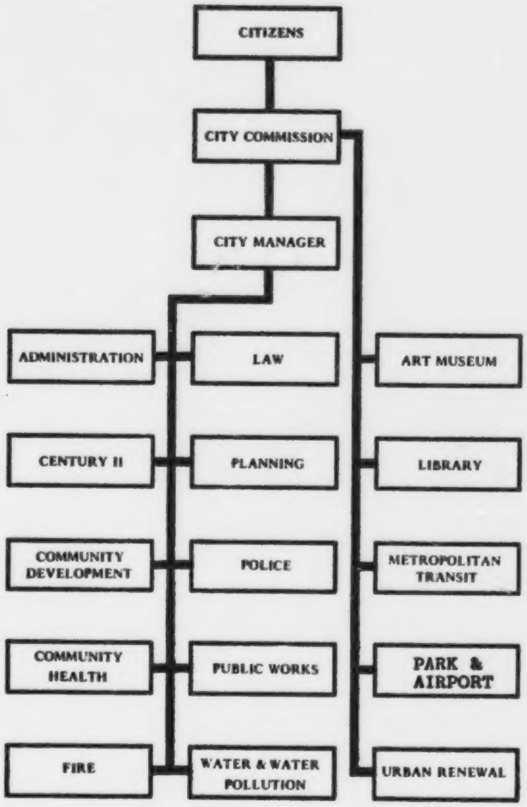


FIGURE 2: WICHITA GOVERNMENT ORGANIZATION

DEPARTMENT OF PUBLIC WORKS - SANITATION DIVISION
1974 ORGANIZATIONAL CHART

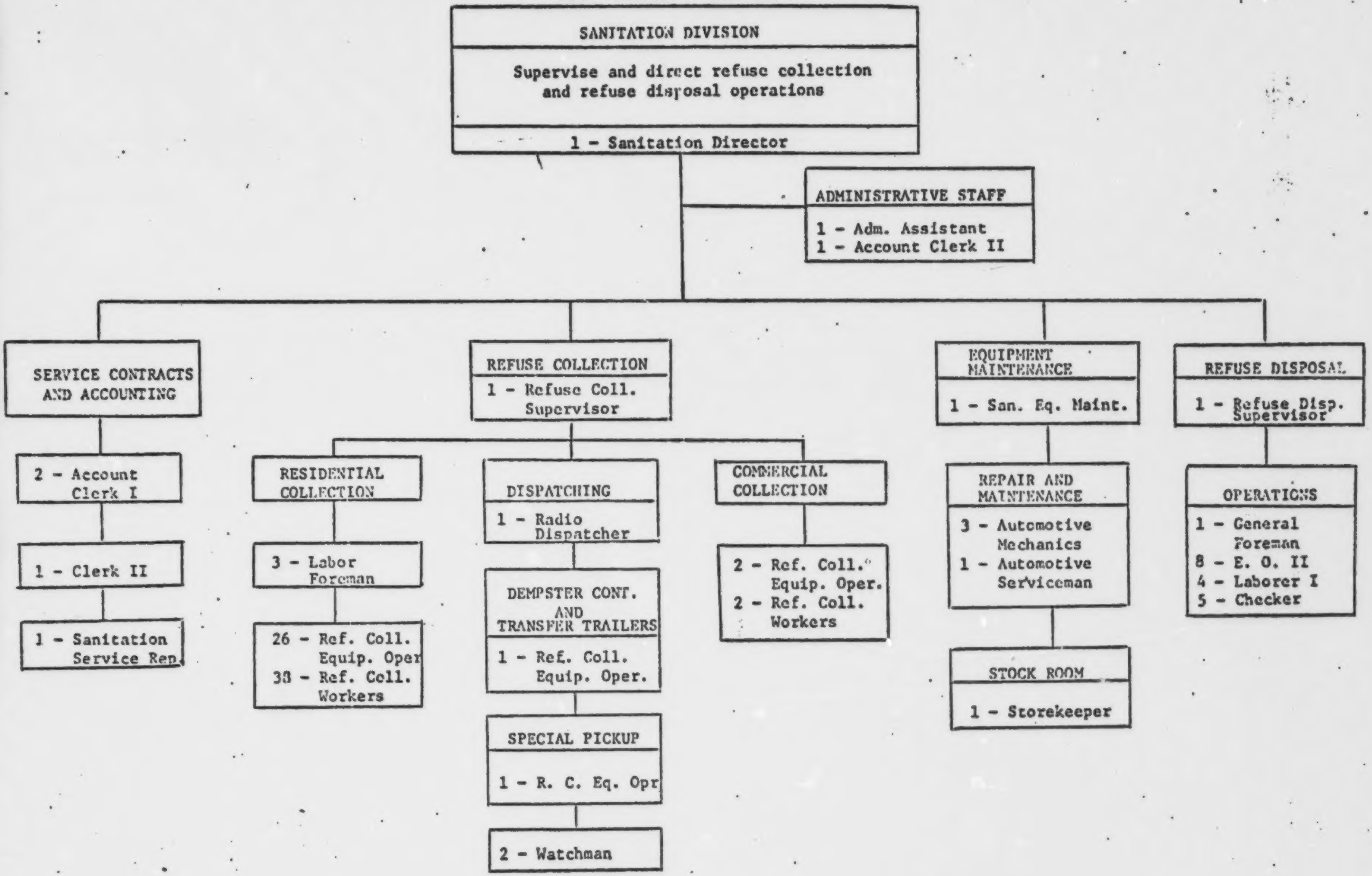


FIGURE 3 : SANITATION DIVISION ORGANIZATION

4.3: Solid Waste Management History

The early history of the Wichita solid waste management system is conventional: putrescible (garbage) collection was the responsibility of the city, whereas all other wastes were either disposed of by the generator or collected by the private sector for a negotiated fee. Prior to 1944, the city chose to honor its putrescible collection responsibility by contracting the work to a private sector firm. This material was collected twice per week and was subsequently sold to a pork company as hog feed. Collection costs were defrayed by an ad valorem tax.

In 1944, Wichita bought out one of the larger private sector firms and started a non-putrescible collection service with 18 routes. At that time, the frequency of collection was once per week at a quarterly rate of $1.75. The rationale behind this move was the opinion of city management that the level of service provided by the private sector was insufficient and that the appearance of the metropolitan area was deteriorating. Even with this new policy the manpower and equipment was not sufficient to service the city so the municipal operation was forced to hire private contractors to handle the overload. In 1945, Wichita took delivery on five 12-cubic-yard packer vehicles and started to phase out the older open-topped trucks that were acquired from the private collector.

Five years later, the city expanded its operations by assuming the collection function for residential and commercial putrescible wastes. This new responsibility was achieved by the purchase of 20 garbage scows and the addition of the necessary manpower. This part of the solid waste management system remained as a tax supported operation whereas the non-putrescible collection was still performed on a fee-for-service basis. The practice of selling putrescibles to a hog producer was continued.

However, in 1955 a state law forbad the use of uncooked garbage as animal feed so the city changes its disposal method to sanitary landfill for these wastes.

By 1958, Wichita was operating two separate collection and disposal operations for putrescible and nonputrescible solid waste. For reasons of economy, the city shifted to mixed refuse collection at this time. As a result, the city has increased its number of stops and was able to eliminate the route structure comprised of 22 garbage scows and 45 men. The additional stops the city acquired were from residents who had private sector collection of their nonputrescibles but recognized the utility of a combined collection by one organization, thus shifting to city collection.

In 1968, the city decided to put its solid waste management system on a public utility basis. To some extent, this is what previously existed but it would now be founded in a firmer regulatory structure. The private sector, recognizing the potential threat this move involved, mounted an effective lobbying effort with the City Commission at that time. Their principle argument was that the public sector should not be allowed to unfairly compete with the private sector and that certain inequities such as free disposal and access to city funds for capital expenditures should not be allowed for the city operation. Their argument was favorably received and the result is the public/private split that exists today.

Currently, the public and private sectors are in open competition for customers. Although such an arrangement appears to be equitable on the surface, it is not. The city Sanitation Division was prohibited by a previous commission from openly soliciting for customers. To circumvent this constraint, the city system strives to provide a higher level and quality of service than that of the private sector collectors: it is hoped this factor will attract more customers in addition to keeping its current customers.

4.4: Agencies Impacting the Solid Waste Management System

With the exception of the Wichita City Commission, the Sanitation Division is not seriously affected by any other formal public organization. For the most part, the constraints on the division have been imposed by the Commission in response to pressures from private sector collectors. However, to some extent, there have been observations and indirect effects that have originated on county and state levels. These, however, have little or no influence on the current operation of the Sanitation Division. Before describing the influence of these agencies, it is of importance to discuss the perspective of two local agencies that one would expect to have an interest in local solid waste management activities.

The Wichita Chamber of Commerce is actively promoting the city as an attractive center for manufacturers who wish to expand or relocate their operations. It is important to note that this is the essential function of this group and any other responsibility must be treated as secondary. Consequently, when asked for their opinion of and policies for local solid waste management problems, the Chamber spokesman denied any acquaintance with the issue. When confronted with hard-copy evidence of local problems, he expressed some surprise. The essence of his response was: yes, there seems to be localized problems but these are not critical and are in areas of the city that are not important in a commercial sense. In view of the economic problems that confront the Chamber of Commerce, this point of view is quite understandable.

The Wichita Model Cities Agency also has not focused its attention on solid waste problems that may exist in its areas of influence. Although these areas represent those which have been documented as having solid waste problems, little has been done to alleviate them. This finding results from the fact that the residents of Model Cities neighborhoods set the priorities and these have not included the solid waste issue. Rather, the focus is on more essential issues such as economic development, housing, employment, and education.

4.4.1: State Level Agencies

At this time, the Kansas State Board of Health is the only state agency that can possibly affect the Wichita solid waste management system but, even then, only indirectly. The Board of Health is empowered by the 1970 Kansas Solid Waste Management Act to require each county to develop a solid waste management plan by 1975. Consequently, Sedgwick County must generate this document and include Wichita in its long range plan.

For the greatest number of counties within Kansas, this task will not be difficult because local power structures favor the county governments. Wichita and Sedgwick County have the opposite balance of power so the eventual form and approach of the solid waste management plan cannot be envisioned at this time. However, the Wichita-Sedgwick County Department of Community Health will do the work and because each government is represented, the plan should be acceptable to both.

4.4.2: Local Level Agencies

As stated above, the Wichita-Sedgwick County Department of Community Health will have the responsibility to develop the solid waste management plan required by state law. To meet the deadline imposed by the state, an Environmental Resource

Task Force made up of knowledgeable citizens and professionals was established in 1970 by City and County Commissioners and the Board of Health. On June 5, 1972, the Task Force presented its report entitled "Considerations for Solid Waste Management - Wichita, Kansas". The summary from this report is presented as Appendix A and selected portions will be presented in the next chapter where appropriate.

The Task Force report is a complete and competently formulated document. It defines the problems, measures their extent, and offers concrete suggestions on the basis of the analysis. It was submitted to the City Commission for consideration and, at the time of the site visit over a year later, was still under review. The city appears to be reluctant to adopt any of the options presented in the report because of possible political repercussions and the anticipated problems of implementation.

The only other local interest groups that appear to affect the operation of the Sanitation Division are the private sector firms, themselves, and their local association. As the history of the solid waste system indicates, they have succeeded in maintaining an open competition structure in the area. The economic conservatism that prevails in the region fosters this arrangement: open competition must be maintained and the public sector must not be given an advantage over the private sector.

5

SOLID WASTE MANAGEMENT SYSTEM CHARACTERISTICS

The solid waste management system in Wichita is comprised of the public sector Sanitation Division and about eighty private sector firms. The public sector services about 30 percent of the city residents with twenty-two crews and the balance is collected by the private sector with approximately 128 crews. There is no interface separating the public and private sector operations. An open-competition atmosphere prevails and customers are free to select their collector or to dispose of their own waste according to rules set forth in the ordinance. The route structures for either sector are under a constant state of transition as customers are either added or dropped: route overlap is universal in the city. No details are available concerning the operating characteristics of the private sector collection firms. This chapter will describe only the public sector system.

The Sanitation Division of the Department of Public Works has no formal solid waste management responsibilities in the City of Wichita. It is responsible only to the extent that it properly serves the customers that subscribe to city collection. The Department of Public Works, with its Central Inspection Division and Maintenance Division, is formally required by ordinance to license private sector firms and collect dead animals respectively. Appendix B presents the current solid waste ordinance.

5.1: Collection Activities of the Sanitation Division

The Sanitation Division collects solid waste from both residential and commercial customers on a contracted basis. Bulky wastes will be collected from both types of customers for a fee depending upon the nature, volume, and accessibility of the items. Residential waste is comprised of mixed refuse whereas commercial wastes are defined as either garbage or trash. These definitions can be found in Appendix B but the method of classification of commercial wastes is not presented. Presumably, a "garbage" account would be a food sales processing or preparation facility whereas a typical "trash" account would be a department store. It is likely that some garbage would be collected from "trash" accounts.

5.1.1: Duties and Level of Service

The minimum level of service provided to either residential or commercial accounts by any collection agency is specified in the solid waste ordinance. Residential mixed refuse must be collected at least once per week whereas commercial garbage requires twice per week collection. The frequency of collection for commercial trash (or refuse - the city ordinance uses both words interchangeably) is not prescribed and is determined by the Director of the Sanitation Division for any given customer.

Residential customers of the division receive tub-out collection from wherever the storage containers are kept on the premises. There is a sliding fee scale that depends upon the quantity of waste taken at any collection. Table 3 presents the current fee schedule for residential customers except those who live in large apartment buildings. In this case, storage area generally is not sufficient for the large number of cans involved and the building management will elect to be treated as a commercial trash account.

As is evident by inspection of the table, unlimited collection is based on the volume collected rather than other opera-

TABLE 3

RESIDENTIAL REFUSE SERVICE RATE SCHEDULE

January 1, 1971

The following rates are to be charged by the City for refuse collection from residential premises:

(a) For regular refuse collection service as provided in Sec. 7.08. 100, Chapter 7.08 of the Code of the City of Wichita:

Single Residence	
Five (5) 30 gallon containers	$ 8.50 per quarter
For each additional 30 gallon container at the same location	1.50 per quarter
Duplex or Tri-plex	
Seven (7) 30 gallon containers	12.00 per quarter
For each additional 30 gallon container at the same location	1.50 per quarter
Multi-family (4 units or more)	
Two (2) 30 gallon containers per unit	4.00 per unit per quarter
For each additional 30 gallon container at the same location	1.50 per quarter

(b) For limited refuse collection service as provided in Sec. 7.08. 100, Chapter 7.08 of the Code of the City of Wichita:

One (1) 30 gallon container	$ 5.50 per quarter
For each additional 30 gallon container at the same location	1.50 per quarter

tional variables. For single-residence, five-can carry out, the base rate is $1.70 per can per quarter. For duplex or triplex stops, the rate is $1.71 per can per quarter whereas for four or more units per stop, the rate rises to $2.00. Additional cans cost $1.50 per can per quarter which is only slightly less expensive than the basic service.

On the other hand, it is apparent that the fee for limited collection is not based on the volume standard. In this case, the division appears to regard the time servicing the stops as the critical cost variable rather than the actual volume collected. A time and motion study of the two levels of service would be a valuable tool to reconcile their difference in price.

Commercial customers are serviced by three different means. If a customer has waste which is of nominal volume and is convenient for residential crews, the city will collect it. There are also hoist-type container collections as well as a Dempster collection. Commercial container routes are served by two crews which collect principally trash. As mentioned previously, it is likely that some garbage will be mixed in with the trash.

The Dempster collection has an interesting sidelight which somewhat compensates for the low efficiencies generally associated with this method. When each Dempster container is collected, it is taken to the Central Garage where it is dumped into an open transfer trailer. At the end of the workday, the Dempster tractor driver covers the trailer with a canvas top, hauls it off to the landfill, and disposes of the daily collection. In some respects, this approach borrows from the transfer trailer concept. It would appear that this technique is quite suitable for a limited hoist-type or Dempster collection.

The current level of service that is offered by the Sanitation Division (and the minimum level of service offered by the private sector) is regarded as inadequate by the Environmental Resource Task Force. The primary problem is that the scheduled service does not include all of the residents of the city, since solid waste collection is not mandatory. In fact, a survey indicated that approximately 10 percent of the dwelling units in the city do not receive service at all. Supposedly, these residents dispose of their waste by carrying it out to one of the city landfills or by burying it on their own property.

Many residents who elect to perform their own solid waste management are not doing this task properly. The results are either stored waste on the premises or clandestine disposal at illegal dumpsites along the road. This problem has grown at an alarming rate since the ordinance prohibiting back-yard burning was activated on January 1, 1972. Environmentalists recognize the root of this problem: residents with limited resources will allocate their income to higher order priorities such as food and shelter before electing solid waste collection. Consequently, one of the major recommendations is that indigent residents be provided service at the expense of the city.

A second problem with the level of service offered to the residents of Wichita is the current policy on bulky item collection. As with a regularly scheduled mixed refuse collection, bulky item pick-up is an elected service; storage on premises and clandestine disposal is widely practiced and cannot be economically controlled. For this reason, the Task Force recommended that this service be extended to all residents at no charge.

A third problem is the once-per-week collection frequency which may not be sufficient given the climate of the city. It was pointed out that southern cities require more frequent collections because of the rapid breeding rate of the fly population. A twice-per-week collection rate was said to be sufficient to disrupt the development cycle of flies under most circumstances and should be adopted for effective fly control.

5.1.2: Manpower and Equipment Allocation

For a number of years, the manpower and equipment assignments have been constant. Furthermore, the projections into 1974 are at the same levels so the division is not expecting any significant change in the solid waste management system. Currently, there are 22 residential routes being serviced by 26 laborers and 24 drivers. The two commercial routes are manned by one laborer and one driver each and the Dempster route is assigned one driver. The Dempster driver also operates a tractor for the transfer trailer body. The manpower and equipment assignments are presented in Table 4.

The packer fleet is quite old with all but six of the bodies purchased in 1964 or earlier. Both in 1969 and 1971, three packers were purchased and these are the newest vehicles. All of the 16 cubic yard packers have Leach bodies mounted on a variety of chassis, usually newer. Most of the 20 cubic yard packers also have Leach bodies except for the six vehicles that were most recently purchased: these are Garwood-Dodge configurations.

5.1.3: Efficiency and Productivity

Efficiency and productivity data for the public sector solid waste management operation in Wichita is presented in Table 5. Attached to the table are the assumptions and rationale behind several of the values presented. It is immediately apparent that the suburban mixed refuse routes are very inefficient with an average of only 213 stops per crew per day and a daily

TABLE 4 : MANPOWER AND EQUIPMENT ALLOCATION

Function Assignment	Residential Mixed Refuse	Commercial	Special	Dempster & Tractor Trailer	Disposal	Admin.	Totals
MANPOWER							
Laborer	26 1/	2	-	-	4	2	34
Driver	24 1/	2	1	1	-	-	28
Equipment Operator	-	-	-	-	8	-	8
Mechnical Maint.	-	-	-	-	-	6	6
Supervisory	3	-	-	-	1	-	4
Clerical/ Secretarial	-	-	-	-	-	4	4
Dispatcher	-	-	-	-	-	1	1
Support Personnel	-	-	-	-	5	2	7
Managerial	1	-	-	-	1	1	3
TOTALS	54	4	1	1	19	16	95
EQUIPMENT							
Packer-16 cubic yard	16	-	-	-	-	-	16
Packer-20 cubic yard	14	2	-	-	-	-	16
Pickup	3	-	-	-	2	-	5
Stake Truck	-	-	4	-	-	-	4
Semi-Tractor	-	-	-	2	-	-	2
Dempster Hoist	-	-	-	1	-	-	1
Tire Truck	-	-	-	-	-	1	1
Wrecker	-	-	-	-	-	1	1
Automobile	-	-	-	-	-	3	3
TOTALS	33	2	4	3	2	5	49

1/ Includes two additional men over minimum requirements to handle excused and non-excused absences

TABLE 5

EFFICIENCY/PRODUCTIVITY DATA FOR WICHITA

	Collection Function / Parameter	Suburban Mixed Refuse Residential	Suburban Mixed Refuse Commercial	CBD Commercial 8/	Dempster 9/ Dumpster
Community Description	Population Served	67,724 1/			
	No. of Resid. or Comm. Units	22,773 2/	607 3/	122 3/	25
	Street Miles				
	Alley Miles				
	Area (sq. mi.)	90.74			
	Pop. density (peo/sq. mi.)	2900			
Waste Amounts	Annual Amounts Collected 4/	38,604 tons	6,006 tons	4435 tons	858 tons
	Lbs./unit/wk	65.2	381	1398	1305
	Lbs./person/day	3.12	Not applicable		
Collection System Description (Inc. Level of Service)	Point of Collection	Carry out	Adjacent to Premises		
	Freq. of Collection	1/week	1/week 5/	5/week 5/	1/2 days 5/
	Type of Storage Container	30 gal. cans	1-2 yard, containers, drums, conventional cans		Dumpster
	Avg. Dist. to Disp. Site	4-5 miles			
	Avg. Miles Driven/truck/day	47 6/			
	Avg. Hours worked/day	eight plus			
	Direct men	48		4	1
	Crews	22		2	1
	Crew Size	2.18 7/		2	1
	Trucks	22		2	1
Wages	Avg. wages and fringe for laborers 10/	$2.73 per hour			
	Avg. wages and fringe for drivers 10/	$3.05 per hour			
Collection Cost/Efficiency Figs.	Stops/Crew/Day	207	6	63	12.5
	Tons/Crew/Day	6.7	1.1	8.5	3.3
	Coll. Cost/Unit/yr.	$27.66		$441.77	$538.96
	Coll. Cost/person/yr.	9.55		N/A	N/A
	Coll. Cost/ton/yr.	14.50		12.15	15.89
	Total Coll. Cost/yr. 11/	$646,753.36		$53,896.11	13,474.03
Disposal	Type & No. of Disp. Sites	Two sanitary landfills			
	Total Disp. Cost/yr.	$36,988.50			
Total Cost	Total Cost/yr.*	$751.112			
Misc. Cost Ratios	Coll. Expense as % of tot. Exp.	95.1			
	Coll. labor expense as % of tot. Coll.	86.3			
	Coll. equip. expense as % of tot. Coll.	6.7			
	Proc. & Disp. expense as % of tot. exp.	4.9			
	Proc. & Disp. labor expense as % of tot. disp.	N/A			

TABLE 5: CONTINUED

EFFICIENCY/PRODUCTIVITY DATA FOR WICHITA

1/ Based on the total number of residential units served and 2.93 people per household as determined from the 1970 Census of Population.

2/ Based on 17,735 residential regular volume and 5,038 residential limited volume unit stops.

3/ The numbers of commercial units served on Suburban Mixed Refuse and CBD Commercial routes are estimates based on the following arguments. It was reported that the suburban routes service 607 commercial stops. Further, the total number of commercial units (trash and garbage) for 1972 was 729. The commercial suburban mixed refuse stops are collected as a part of the residential routes, but many are collected more than once each week. This line of reasoning is supported by the fact that the two CBD trucks make 63 stops per day each (= 126 total) for units likely to require 1/day collection. Further, the assumption that each of the 607 commercial stops represents a unit is reasonable because of truck routing factors.

4/ The annual tonnage collected by all crews and subsequently disaggregated by function was determined by a series of calculations. In the disposal report (December, 1972) it was stated that a total of 3809 sixteen yard and 3880 twenty yard full packer loads were collected that year. Further, it is known that the CBD Commercial accounts are served by two of the newer packers, while the Suburban Mixed Refuse routes are collected by ten 16 and twelve 20 yard packers. Using the truck ratio between functions, the annual collected volume was calculated to be:

Suburban Mixed Refuse = 127,458 cubic yards

CBD Commercial = 11,086 cubic yards

The newer CBD Commercial and the older Suburban Mixed Refuse Vehicles were assumed to have compaction densities of 800 and 700 pounds per yard respectively. Consequently, the total tonnage collected by both functions was:

Suburban Mixed Refuse = 44,610 tons

CBD Commercial = 4,435 tons

TABLE 5: CONTINUED

The Suburban Mixed Refuse was further disaggregated into residential and commercial sources by using the average daily collection of three compacted yards per six commercial accounts that each route was reported to collect. Again, a compacted density of 700 pounds per yard was assumed.

5/ The collection frequencies presented for Suburban Mixed Refuse and CBD Commercial accounts are estimates supported by arguments presented in note 3/. The Dumpster collection frequency is based on an estimate of 4 cubic yard containers and the transfer trailer capacity of 40 cubic yards. This would suggest that an average of 12.5 containers per day are picked up which is quite reasonable considering the characteristics of the early Dempster system.

6/ Based on 1972 fleet mileage of 317,933 miles, 260 day year, 26 truck fleet (22 suburban routes, 2 CBD Commercial routes, 1 paper recovery route, and 1 Dempster Dumpster route).

7/ Based on 18 two man routes and 4 three man routes.

8/ This column does not include one paper recovery route being operated. This is currently funded from the Emergency Employment Act and will be discontinued as it does not break even.

9/ See text for description of this collection function.

10/ Taken from 1971 Budget request for 1972. Does not include fringe benefits which are administered city wide.

11/ These values were computed from the actual costs incurred during 1972. Disposal costs are treated as an operations expense and was subtracted from the annual costs. The allocation of expenditures, by function, was performed using the ratios of functional direct manpower to total direct manpower with administrative expenses being allocated proportionally.

collection of only 7.8 tons. If it is assumed that the commercial steps on these routes take little time, then the residential collection efficiency is only 6.7 tons per day.

The low crew efficiencies clearly result from two factors. First, the system is performing carry-out service which is a time-consuming activity. Further, the average collection will be 65.2 pounds as there is only one collection per week. The collectors may service more than one stop before returning to the truck to unload their tubs. The crewman efficiency, including drivers, is 2.29 tons per man per day, which is a nominal value.

The second and more important factor affecting crew productivity is route structure discontinuity forced by the open competition for customers. This considerably affects collection time because of the longer mean distances between stops and the disruption of a smooth collection pattern. Conservatively, taking eight hours as the mean workday (which is somewhat compensated by the time to make an average of 1.23 trips to the disposal site), a typical stop requires 2.25 minutes to service. A considerable fraction of this time is, of course, spent traveling between stops.

The Environmental Resource Task Force performed a timed route study and presented the results in the June 5, 1972 report. The tabulated data for the two public and two private sector routes that were studied appear in Figure 4. Taking the time in the total routes column and dividing by the number of stops, the average time per stop from this survey is two minutes and fifteen seconds, a value in good agreement with the previous calculation. What is clear from Figure 4 is that as the linear customer dwelling unit density rises (houses or stops per mile), the average time required to service a stop falls. Rows number 6 and 7

TIME STUDY CHART

	Study Route #1	Study Route #2	Study Route #3	Study Route #4	Total Routes
1. Total number of stops	74	67	36	37	214
2. Total minutes of study	118 min.	145 min.	94 min.	120 min.	477 min.
3. Average time per stop (# of collectors x total min.) / total # of stops	3 min. 12 sec.	4 min. 20 sec.	5 min. 13 sec.	6 min. 30 sec.	4 min. 30 sec.
4. Total miles per study route	1.5	7	4.8	8.2	21.5
5. Average stops per mile	49.3	9.4	6.9	4.5	9.95
6. Collector's time on property:					
Driver on property	64 min.	59 min.	27.5 min.	47 min.	
Collector on property	63 min.	48 min.	27.5 min.	33 min.	
Total	127 min.	107 min.	55.0 min.	80 min.	364
% of time on property	55%	23%	29%	33%	40.2%
Average time on property per stop	1 min. 43 sec.	1 min. 37 sec.	1 min. 40 sec.	2 min. 11 sec.	1 min. 45 sec.
7. Collector's time off property:					
Driver off property	54 min.	89 min.	66.5 min.	73 min.	
Collector off property	55 min.	97 min.	66.5 min.	86 min.	
Total	109 min.	186 min.	133.0 min.	159 min.	587
% of time off property	45%	77%	71%	67%	59.8%
Average time off property per stop	1 min. 29 sec.	2 min. 38 sec.	4 min. 2 sec.	4 min. 19 sec.	2 min. 48 sec.

FIGURE 4 : ENVIRONMENTAL RESOURCE TASK FORCE ROUTE STUDY

indicate that the truck productivity is directly related to the time that the collectors are not on the customers' property and are, presumably, traveling between stops.

There are two findings that are of importance to state here. First, as the linear dwelling unit density rises, so will collection efficiency. Second, and of great significance to Wichita, is that as route overlap becomes more severe the linear customer dwelling unit density for any given collection crew will drop. This is costly in terms of both crewmen time and excessive truck mileage and, as a result, costly to the residents of the city.

In terms of financial efficiencies, the collection cost of $27.66 per suburban customer per year is quite reasonable given the high level of service and relatively low crew efficiencies. This finding is explained by the fact that employee wages are relatively low and,equipment costs are negligible. This is surprising, given the age of equipment and the expected maintenance costs.

The other two collection functions, CBD commercial and Dempster routes, also have very low efficiencies. In the case of the CBD routes, this is not easily explained due to the higher customer density one would assume to exist. With only 63 stops per route per day, it appears that these crews are either not utilized to their fullest capacity or there are constraining factors that were not discovered. The Dempster route efficiency of 3.3 tons per day is typical of this outmoded system and comes as no surprise.

5.2: Quality of Service

The quality of service rendered by the Wichita solid waste management system is relatively high considering only the municipal operation. The complaint frequency has been hovering around .2 percent for the last six years and has not varied significantly from this value. The finding is not surprising given the slowly varying system parameters and the reasonably stable workforce. However, in one respect, there is an element of interest because the competive nature of the system continuously forces the addition and deletion of customers. That the collection crews can readily adapt to the shifting route patterns is a definite plus for the workforce. This ability is probably strongly encouraged by management because customer dissatisfaction can easily lead to the loss of an account.

Another indicator of customer satisfaction with the municipal operation is the slow and moderate change in the total number of dwelling units it serves. Table 6 presents the customer levels for the last six years. Since 1967, the Sanitation Division has experienced a net loss of only 849 customers (3.6 percent) which is quite reasonable given the inability to solicit customers.

The detail of Table 8 is quite interesting. First, there has been a considerable loss of full service accounts to limited service collection. The major change occurred between 1969 and 1970 when the full effect of the aerospace recession was felt. Apparently, many residents felt that they could do without five - can collection every week and get along with a very limited level of service. This trend has continued through 1972. The loss of regular volume collection is approximately compensated by a gain in limited volume collection.

The quality of service rendered by the private sector collectors cannot be stated with any certainty. However, it is probably comparable to the public operation as there is no apparent shift of customers to the Sanitation Division's accounts.

TABLE 6
SHIFT HISTORY OF CUSTOMER LEVELS

Calendar Year	Regular Full Service Accounts			Limited Service Accounts			Total Residential Accounts
	Total	Plus	Minus	Total	Plus	Minus	
1972	17,735	1,972	2,237	5,038	1,885	1,395	22,773
1971	18,196	2,204	3,689	4,548	1,760	1,223	22,744
1970	19,681	2,278	3,761	4,011	2,117	519	23,692
1969	21,064	3,318	3,681	2,463	614	212	23,527
1968	21,434	3,402	3,439	2,088	175	243	23,522
1967	21,467	4,286	2,438	2,155	153	226	23,622

Unfortunately, this hypothesis cannot be proven because no data is available on customer pattern shifts among private sector firms.

If quality of service has, as one factor, the frequency of service rendered, then the solid waste management system in Wichita may be somewhat inadequate. Due to the high summer temperatures, it is quite likely that rapid biodegradation will occur with the normal smells of decaying organic matter. Furthermore, there is likely to be an insect problem at the same time. Although putrescibles must be drained and wrapped prior to disposal in the storage container, this rule may not be sufficient. It must be recalled that Wichita did have two garbage collections per week prior to the transition to mixed refuse collection. Draining and wrapping can contribute to insect control, but will not alter significantly the decay rate.

City-wide, the quality of service (including level of service as a factor) is not adequate. This point will be discussed at great length in the section of this chapter dealing with low income areas.

5.3: Labor Management Relations

The workers of the Sanitation Division are not represented by a union but do seat two of thirty-three members in the Employees' Council of the Wichita Municipal Employees' Association. The bylaws of this organization state that the functions of the association shall be:

1. To investigate, consider and report or make recommendations on matters pertaining to the general welfare of employees of the City.
2. Upon request of any appointing authority, to advise the appointing authority concerning personnel problems.
3. To consider personnel policies and problems submitted to it by the Personnel Director.

4. To engage in and carry on activities and programs relating to health and welfare of employees represented by the elected representatives, including employees' safety and training, recreation, community welfare, and group insurance programs.

5. At the last regular meeting of the Association in December, to nominate employees to be voted upon for election to serve on the Wichita Employees' Retirement Board in accordance with the Retirement Ordinance. Members representing Police, Fire, Park and Library shall not participate in the nomination. Non-commissioned employees of Police and Fire Departments may vote in the election.

It is clear that the Association is for the benefit of city employees but does not engage in formal bread-and-butter labor negotiations. Militancy does not appear to be necessary for any organization representative of city employees as Wichita has a generous fringe package set up to compete with other employers in the area. Figure 5 presents the structure of the benefit package as it now appears.

The municipal solid waste collection workforce was said to have a competitive entry wage but a slower raise rate than employees in local industry. Figure 6 presents the 1972 average hourly pay to collection employees in comparison with other positions in the Wichita area. From this figure, it is clear that the solid waste collection workforce is somewhat underpaid in comparison to other points of entry in the Wichita job market. Furthermore, Table 7 indicates that the average annual raise is also likely to be lower in the Sanitation Division. Since 1968, the driver and collector salaries have grown by 35.3 and 38 percent, respectively, but this corresponds to annual average raises of only 4.41 and 4.7 percent.

The absenteeism and turnover rates are strongly coupled to the health of the Wichita economy. During the aerospace recession of 1969 and 1970, those two traditional problems essentially

1. Vacation -- As a City of Wichita employee, you receive two weeks paid vacation each year. Vacation is earned on a calendar year basis. After five (5) years of service, you are eligible for additional longevity vacation, according to the following schedule:

Years	Days	Years	Days	Years	Days	Years	Days
5	11	9	14	14	17	20	20
7	12	10	15	16	18		
8	13	12	16	18	19		

2. Holidays -- Employees receive nine (9) paid holidays per year. The City of Wichita has adopted the Federal Holiday Plan that enables most employees to enjoy more "three-day weekends."

3. Sick Leave -- You accumulate one day of sick leave for each month of work. There is no maximum accumulation. Sick leave is like an insurance policy against a payless payday because of illness. It pays to use it wisely!

4. Longevity Pay -- Employees become eligible for longevity pay upon the completion of six years accumulative service. Longevity pay is at the rate of $2.00 per month times the number of years accumulated service.

5. Social Security -- With the exception of commissioned Police and Fire personnel, all City employees are covered by Social Security. The contribution is 5.85% of the first $10,800 (effective January 1, 1973). The City in turn contributes a like amount for each employee. These rates are established by the Federal Government.

6. Group Life Insurance -- Life insurance is available at low group rates. The City maintains a self-insuring plan and assumes one-half the cost of the program. You are eligible for life insurance with double indemnity and dependent coverage.

7. Group Health Insurance -- The City maintains and contributes 75% of the cost for Blue Cross and Blue Shield hospitalization insurance for employees and their families.

8. and 9. Retirement -- Your retirement plan provides for old age benefits, disability payments, death benefits, and survivors benefits. Commissioned Fire and Police have a separate retirement program. Both are contributory, which means you and the City share in the cost. Only full time permanent employees are eligible to participate in the retirement programs.

Additional Benefits -- The following benefits still further supplement your pay, but were not considered in the computation of your fringe benefits:

a. Emergency leave
b. Tuition reimbursement
c. Employee parking
d. Education pay
e. Union dues collection
f. Credit Union deduction
g. Payroll bank deposit
h. In-Service training
i. Disability insurance deduction
j. Uniform allowance
k. Personal business leave

FIGURE 5: BENEFIT PACKAGE STRUCTURE

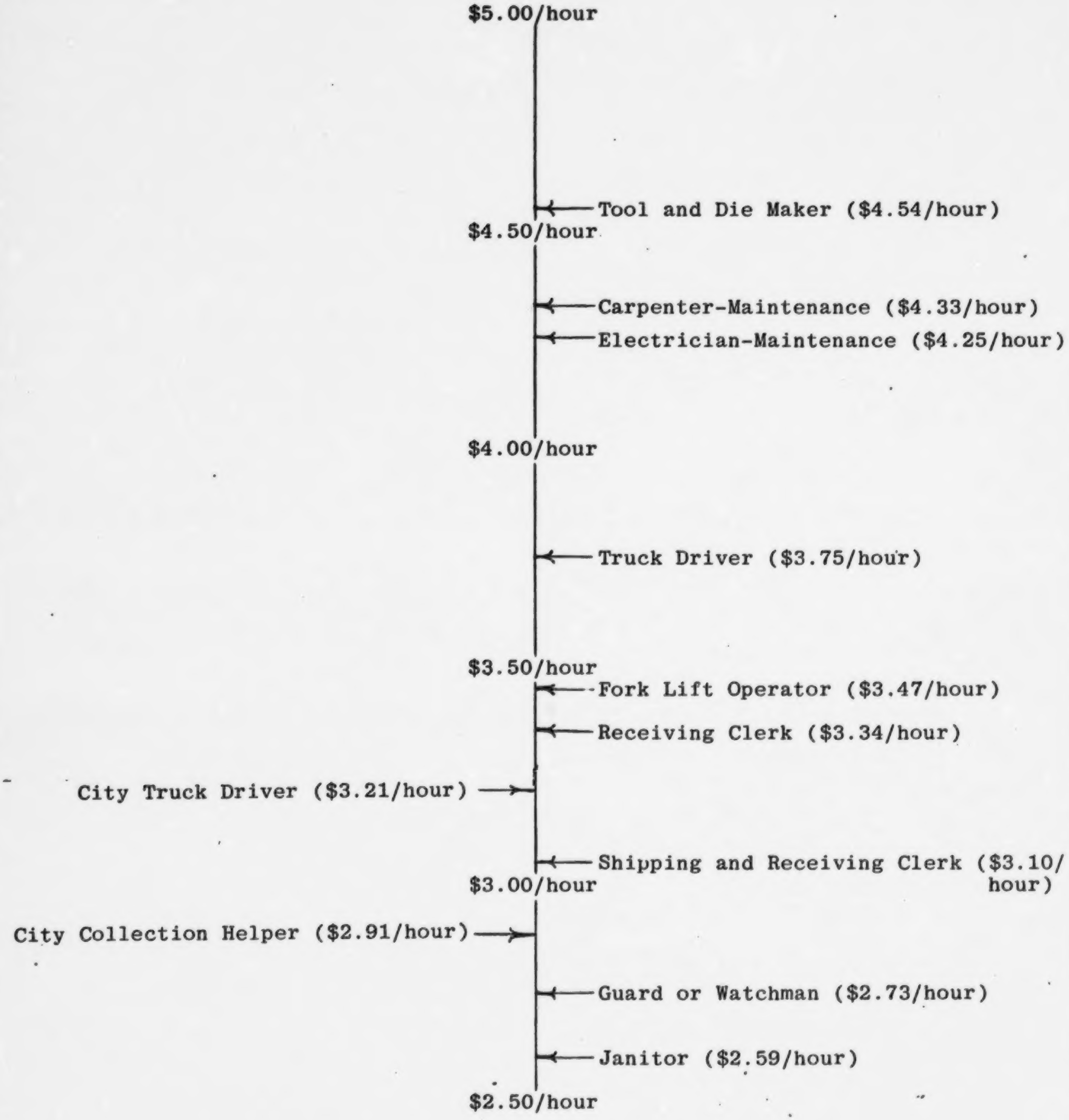


FIGURE 6 : COMPARATIVE AVERAGE WAGES

TABLE 7
HISTORICAL COLLECTION FORCE WAGE LEVELS 1/

Year	Driver Wage ($/hr)	Annual Increase (%)	Collector Wage ($/hr)	Annual Increase (%)
1968	$2.722	1.2%	$2.239	.2%
1969	2.754	7.8	2.243	17.1
1970	2.970	2.6	2.627	4.1
1971	3.046	5.4	2.734	6.5
1972	3.209	8.2	2.911	5.8
1973	3.472	6.1	3.080	.3
1974	3.683		3.089	

1/ Solving $W_f = W_i (1 + i)^t$ for i from the initial and final wages over a seven year time interval yields.

$i_{Driver} = .0441$ $i_{Helper} = .0470$

vanished: Ph.D. engineers and other high level professionals were manning collection trucks. Since those years, the city economy has diversified and the aircraft industry has regained its health with the result that some turnover and absenteeism have returned to the Sanitation Division. As the current head of the division says, "Trash collection is probably the last thing most people look for doing." In Wichita, this is certainly the truth.

As with most solid waste management systems, the Sanitation Division has an exceptionally stable core with turnover and absenteeism problems resulting from transient labor. In the division, there is an average monthly turnover rate of seven men and there are days when the collection workforce is five and six men short. Since the routes must be traversed on schedule, these problems result in overly long workdays for the employees that show.

The new head of the Sanitation Division has taken steps to reduce these problems. First, he initiated the policy that all accrued overtime will be paid regardless of circumstances. He does admit that this move is excessively expensive and, as a result, he is trying to reduce an average workday to near eight hours. He hopes to achieve this goal by crew restructuring. At the time of his appointment, there were 18 two-man crews and four three-man crews servicing the suburban mixed refuse routes. After consultation with his route foreman, it was decided that two-man crews on all routes would be sufficient providing there was a swing man for assignment to routes known to be heavy on certain days. With this formula, a new route was added to help balance workloads. From all reports, this new system is effective and the average workday is approaching eight hours.

Long-term solutions to turnover and tenure problems are being sought but, given the current solid waste management system in the city, few options have surfaced. The only tentative solution suggested by the division is a general pay raise so as to become more competitive with private industry. Given the marketing constraints within the solid waste management field, this solution is not feasible as the division would have to raise its rates to meet payroll.

5.4: Low Income Areas and Residents

The most significant solid waste problem is the absence of mandatory collection of all city residents. It was estimated by survey that nearly 10 percent of the city's residents do not subscribe to a collector and perform their own solid waste "management." Formerly, many of these residents disposed of their mixed refuse by back-yard burning but now this method is prohibited by law. There is considerable evidence, gathered by the Environmental Resource Task Force, that solid waste from these residents is simply accumulating on the premises or is illegally disposed in the city. This is an especially severe problem in lower income areas. Further, the open competitive nature of the solid waste management system does not lend itself to solution of these problems by the assignment of specific waste responsibilities.

For the most part, the 10 percent of the city's residents that do not receive any solid waste collection service at all are low income or indigent families. It is clear that these families will not pay for collection if given the option of rejecting service. Other priorities, such as food, shelter, and clothing, will be met before solid waste collection is even considered.

Bulky item collection is performed by the city and many private sector collectors on a fee-for-service basis. However, there is no firm fee schedule and the cost of each collection of this type is negotiated between the customer and the collector. The result of this policy is that little bulky waste gets collected. For example, during 1972, there were only 1,026 special collections from residential customers performed by the Sanitation Division. Since the division services about 30 percent of the city's dwelling units, a fair assumption is that the private sector has little more activity in this function. Consequently, a reasonable estimate of the total bulky item collection is many times lower than what should be expected in a municipal area of the size of Wichita. What obviously is happening is that clandestine disposal is practiced as well as storage of bulky wastes by many city residents.

The city management and the Environmental Resource Task Force are acutely aware of the problems faced by the indigent residents of Wichita and a bold step has been taken to partially alleviate this situation. Approximately $100,000 has been allocated from Revenue Sharing for the collection of mixed refuse from indigent families by the Sanitation Division. It has been estimated that this money will be able to support the weekly collection from approximately 3,000 residential dwelling units for one year. However, this is not likely to be sufficient given the total number of residential dwelling units in the city (about 100,000 total with 71,200 of these being single, detached houses). As mentioned earlier, the solid waste survey found that 10.6 percent of the single family detached dwelling units (about 7,550) had no weekly collection service and this number is 2.5 times the number of homes the current program can handle. It is likely that this program will be expanded in future years.

5.5: Disposal Function - Present and Planned

Solid waste disposal is a municipal operation in Wichita, and is performed at two close-in sites. Sanitary landfill is performed at both facilities and, in addition, the northern site (see Figure 7) is used for brush disposal by open burning. The convenience of these facilities to both the public and private sector collectors is a definite advantage and helps to maintain collection efficiencies. The landfills are open to anyone in the city who requires a disposal site for conventional solid wastes. Further, the solid waste ordinance (Appendix B) clearly specifies that any licensed private sector collector will have the availability of the sites to meet his disposal requirements.

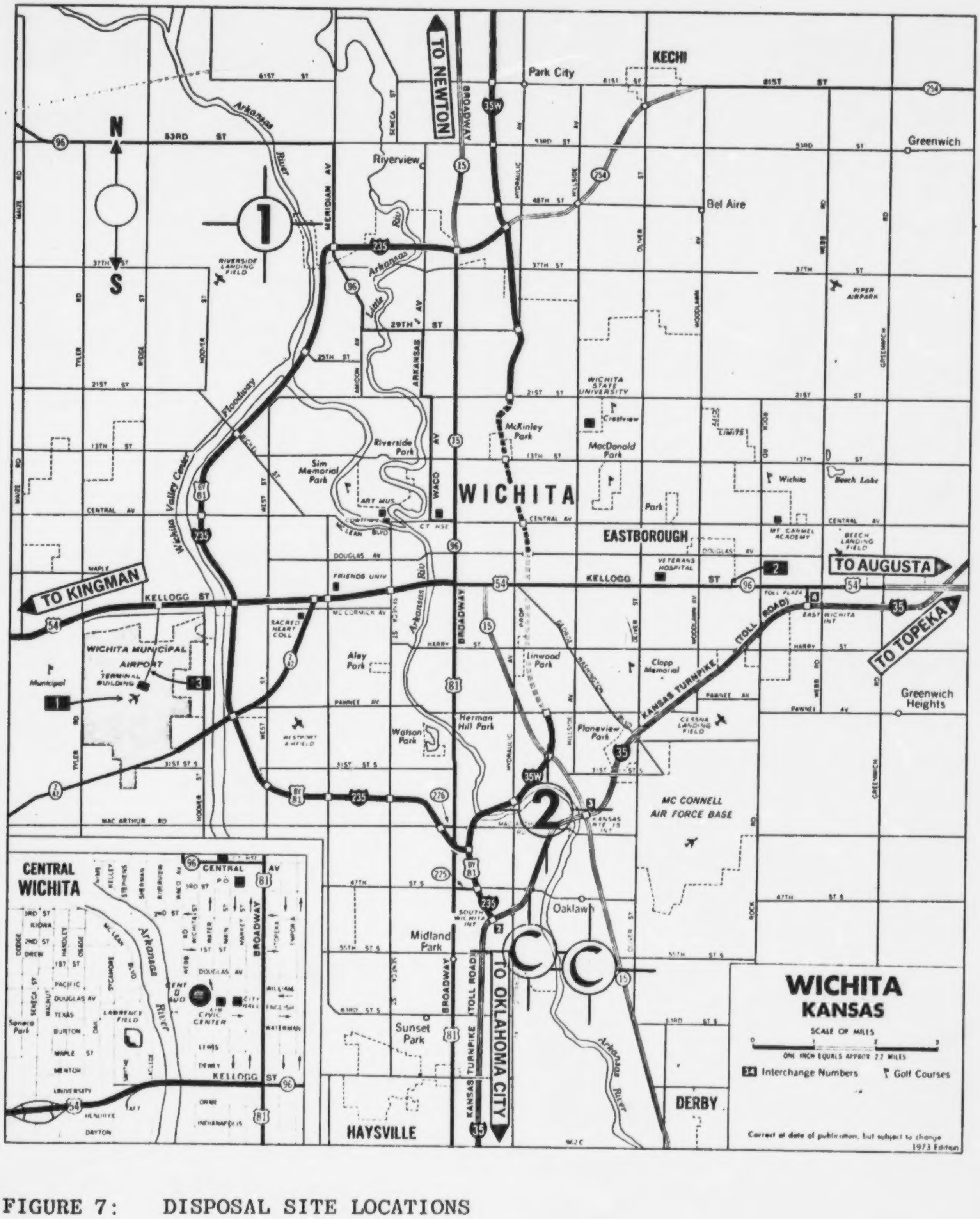


FIGURE 7: DISPOSAL SITE LOCATIONS

As with the collection operation, the disposal function is performed on a fee-for-service basis with all users (including city trucks as well as private individuals) being assessed a disposal charge. The current fee schedules, presented as Figures 8 and 9, indicate that volume rather than weight is the independent variable establishing the rate structure. Rates differ because of the relative convenience of the Chapin landfill to the site users.

If it is assumed that the compaction density of a new 20-yard packer is 800 pounds per cubic yard, then the disposal fee is approximately $6.00 per ton at the Chapin landfill. It should be noticed, however, that disposal charges for uncompacted wastes are considerably higher when taken on a weight basis. For example, if uncompacted waste is assumed to have a density of 200 pounds per cubic yard, then a 20-yard truck would be charged $2.25 per ton. The rationale for the choice of this schedule policy is not understood but is suspected to result from the city's view that landfill costs are based on the compaction necessary for proper disposal.

The disposal sites are currently manned by one supervisor, one foreman, eight equipment operators, four laborers, and five checkers. The Brooks landfill is open every day of the week, including holidays, from 8:00 a.m. to 5:00 p.m. The regular staff consists of three equipment operators, one checker, and two laborers (one being a spotter). The Chapin landfill operates on every day but Sunday and holidays but is open until 5:30 p.m. One additional equipment operator is assigned to this site. The brush site is open every day, from 8:00 a.m. to 5:00 p.m., and is staffed by only a checker.

The disposal fleet consists of conventional landfill equipment all of which is relatively new. Table 3 lists the equipment used for refuse disposal. Since the time that this list was formulated, the city purchased a new Hyster compactor which will be used at the Chapin landfill.

CITY OF WICHITA
DEPARTMENT OF PUBLIC WORKS
SANITATION DIVISION

REFUSE DISPOSAL SERVICE CHARGE SCHEDULE
Brooks Landfill and Brush Site

The following rates are to be charged by the City for refuse disposal as provided in Chapter 7.08, Sec. 7.08.280 of The Code of the City of Wichita:

TYPE OF VEHICLE	RATE PER LOAD
Automobiles	.50
Pickups - no sides	1.00
Pickups - with built up sides	1.50
Two-Wheel Trailers	1.50
Four-Wheel Trailers	2.50
Single-Axle Dump Truck	3.00
Tandem-Axle Dump Truck	3.50
Commercial & Other Stake Trucks	3.00
Rubbish Collectors Stake Trucks	3.00
Tree Haulers	3.00
Non-Compactor 20 yds.	3.50
Non-Compactor 30 yds.	5.00
Non-Compactor 40 yds.	7.00
Packer Trucks 9-14 cu. yds.	3.00
Packer Trucks 15-17 cu. yds.	3.50
Packer Trucks 18-20 cu. yds.	4.00
Packer Trucks 21-25 cu. yds.	5.00
Packer Trucks 26-30 cu. yds.	7.00
Compactor 40 yds.	9.00
Stake Semi-Trailers	7.00
Compaction Semi-Trailers	14.00

FIGURE 8: BROOKS (NO. 1) DISPOSAL FEE SCHEDULE

CITY OF WICHITA
DEPARTMENT OF PUBLIC WORKS
SANITATION DIVISION

REFUSE DISPOSAL SERVICE CHARGE SCHEDULE
Chapin Landfill

The following rates are to be charged by the City for refuse disposal as provided in Chapter 7.08, Sec. 7.08.280 of The Code of the City of Wichita:

TYPE OF VEHICLE	RATE PER LOAD
Automobiles	.50
Pickups - no sides	1.50
Pickups - with built up sides	2.00
Two-Wheel Trailers	2.00
Four-Wheel Trailers	3.25
Single-Axle Dump Truck	4.00
Tandem-Axle Dump Truck	4.50
Commercial & Other Stake Trucks	4.00
Rubbish Collectors Stake Trucks	4.00
Tree Haulers	4.00
Non-Compactor 20 yds.	4.50
Non-Compactor 30 yds.	7.00
Non-Compactor 40 yds.	9.00
Packer Trucks 9-14 cu. yds.	4.00
Packer Trucks 15-17 cu. yds.	4.50
Packer Trucks 18-20 cu. yds.	5.00
Packer Trucks 21-25 cu. yds.	7.00
Packer Trucks 26-30 cu. yds.	9.00
Compactor 40 yds.	12.00
Stake Semi-Trailers	9.00
Compaction Semi-Trailers	18.00

FIGURE 9: CHAPIN (NO. 2) DISPOSAL FEE SCHEDULE

TABLE 8

SANITATION DIVISION - REFUSE DISPOSAL - FLEET DIRECTORY

YEAR & MAKE	MODEL	BODY TYPE	GROSS WT.	IDENTIFICATION OR MOTOR NO.
70 Chev	Biscayne	Fordor Sedan		154690J188777
69 Ford	F-250	Pickup	12,000	F26YKE74456
70 Dodge	200	Pickup	12,000	E23BE0S141982
71 Dodge	F-100	Pickup	12,000	D14AE1S342611
68 Ford	F-750	Dump	20,000	F75EUC17052
53 "Cat"	D6	Shovel Loader		10A64
61 "Cat"	D7	Bulldozer		17A14871
65 AC	HD-16	Bulldozer		6529
66 "Cat"	D7E	Bulldozer		47A3825
67 AC	HD-16	Bulldozer		8228
56 "Cat"	D8	Bulldozer		14A3976
71 AC	HD-16	Bulldozer		11554
72 "Cat"	D7F	Bulldozer		94N4265
60 Galion	104	Grader		104-C-02803
61 Ford	881D	Tractor		76331
65 "Cat"	435E	Cable Scraper		85F153
66 "Cat"	435E	Cable Scraper		85F169
69 "Cat"	435E	Cable Scraper		85F221
70 "Cat"	435E	Cable Scraper		85F229
53 "Cat"	D13000	Pump Engine		453112
		Sand Pump		
55 Danco		Rotary Mower - 5 ft.		
68 Heckendorn		Mower - 24"		
Sterling 30M		Water Pump		

Since the disposal sites are open to all users, the quantity of solid waste delivered by city crews is only a fraction of the total loading. Figure 10 presents the December 1972 monthly report of the activities and revenues associated with disposal at both sites. Annual totals are also presented in the tabulated data but the actual loading at each site cannot be readily identified. However, from the fee schedules and Figure 10, the use frequency of city packers for each site can be found. A calculation provides the rates shown in Table 9.

TABLE 9 : DISPOSAL SITE USE FREQUENCY BY CITY CREWS

Vehicle Size	Chapin Use Rate	Brooks Use Rate	Total
20 cubic yards	3424 loads	456 loads	3880 loads
16 cubic yards	2571 loads	1238 loads	3809 loads

It is clear that even though the Chapin site is more expensive, it is more frequently visited by city crews than the Brooks site. Obviously, the Chapin site is more convenient to the majority of city routes, a conclusion that is further supported by the greater use-ratio of twenty cubic yard trucks that operate in denser city areas.

The Brooks site has approximately 160 acres left of an original 240 acres and is estimated to have a remaining use life of about eight years. The Chapin site, which is used far more extensively, has only 15 acres remaining, and is not expected to last a year. Because of the convenience of this southern site, the city is actively seeking a nearby replacement. At this time, there are two such sites under consideration located in Figure 7 and indicated by a "C" for candidate. Of the two, the location west of the Arkansas River is preferred because of its size (200 acres) and its greater convenience to a larger number of users. The other site is slightly smaller (140 acres) and can be accessed conveniently only from Route 15.

CITY OF WICHITA
DEPARTMENT OF PUBLIC WORKS
SANITATION DIVISION - REFUSE DISPOSAL

Reproduced from best available copy.

MONTHLY REPORT
DECEMBER 1972
LOADS RECEIVED AND REVENUES

TOTAL	THIS MONTH		SAME MONTH LAST YEAR		THIS YEAR TO DATE		LAST YEAR TO DATE	
TYPE OF VEHICLE	LOADS	REVENUE	LOADS	REVENUE	LOADS	REVENUE	LOADS	REVENUE
City Packers 20 cu. yds.	310	1,518.00	328	1,597.00	3,880	18,944.00	3,829	18,520.00
City Packers 16 cu. yds.	287	1,211.50	285	1,200.50	3,809	15,902.50	3,606	15,393.00
City Stake 8,000 & Over	1	4.00	10	40.00	113	418.00	159	617.00
City Semi-Trailers	18	158.00	15	135.00	212	1,724.00	200	1,752.00
Automobiles	592	296.00	474	237.00	9,959	4,979.50	7,971	3,985.50
Pickups-no sides	2,625	3,064.00	2,017	2,293.50	47,885	55,468.50	39,966	45,277.50
Pickups with built-up sides	571	961.00	549	910.00	12,365	20,556.50	10,418	17,213.50
Two-Wheel Trailers	404	676.00	368	605.50	10,651	17,804.00	9,055	14,883.50
Four-Wheel Trailers	30	82.50	37	101.50	792	2,176.50	729	2,002.50
Single-Axle Dump Truck	140	496.00	171	603.00	2,733	9,611.00	2,270	7,672.00
Tandem-Axle Dump Truck	326	1,391.00	398	1,614.00	3,239	13,246.50	3,653	15,649.50
Commercial&Other Stake Trucks	742	2,329.00	804	2,669.00	11,664	37,156.00	8,002	25,796.00
Rubbish Collect Stake Trucks	360	1,335.00	231	769.00	5,506	19,939.00	5,2[illegible]6	18,282.00
Tree Haulers 8,000 GVW & Over	85	255.00	103	309.00	1,725	5,175.00	2.210	6,630.00
Packer Trucks 9-14 cu. yds.	212	701.00	239	788.00	2,779	9,323.00	3,101	10,398.00
Packer Trucks 15-17 cu. yds.	724	2,780.00	712	2,787.00	9,47[illegible]	36,661.50	8,402	32,756.00
Packer Trucks 18-20 cu. yds.	1,095	5,162.00	994	4,700.00	12,942	61,237.00	10,580	49,707.00
Packer Trucks 21-25 cu. yds.	4	20.00	2	10.00	60	314.00	43	229.00
Packer Trucks 26-30 cu. yds.	326	2,752.00	205	1,747.00	4,148	35,530.00	2,905	24,571.0
Stake Semi-Trailers	27	201.00	25	181.00	404	2,916.00	480	3,462.00
Non-Comp. 50 yd. National Guard	30 0	270.00 0	 0	 0	74 66	666.00 198.00	 11	 0
Compactor 40 yd.	155	1,675.00	58	615.00	1,693	17,892.00	428	4,557.00
Non-Compactor 20 yd.	111	419.50	12	54.00	1,443	5,446.50	220	979.00
Non-Compactor 30 yd.	[illegible]	[illegible]9.00	11	61.00	1,409	[illegible],775.00	93	545.0
Non-Compactor 40 yd.	116	976.00	50	406.00	1,036	8,615.00	503	4,189.0
Other City Vehicles	377	0	584	18.00	7,768	0	7,328	1,409.00
Sedgwick County Vehicles	56	0	109	0	1,369	0	1,371	0
Kansas State Vehicles	7	0	14	0	364	0	467	0
TOTALS	9,862	29,582.50	8,805	24,451.00	159,563	411,961.00	133,286	326,476.00
TOTAL TONS Est.	19,203.		16,383.		246,836		187,939	

FIGURE 10 : DISPOSAL FUNCTION - 1972 ACTIVITIES AND REVENUES

As will be discussed in somewhat greater detail in the financial section of this chapter, the public sector disposal operation supports itself and, in fact, returns sufficient revenues for the purchase of additional equipment. The Hyster compactor recently purchased by the city was funded from these surplus revenues.

5.6: Equipment Description

The collection fleet owned and operated by the Sanitation Division is composed principally of old bodies mounted on a mix of new and old chassis. Table 10 presents the composition of the current fleet in terms of the chassis/body configuration and Table 11 lists the packer bodies alone. The division practices body transplants to obtain the maximum useful life from its equipment purchases, a policy that is not commonly found in public sector operations.

The chassis are a mix of IH, Ford, and Dodge products, with the latter being the most recent addition to the fleet. All are gas fueled but the Sanitation Division is exploring the potential benefits offered by diesel power. Although the initial costs of diesel vehicles are considerably higher, service life is many times greater than gasoline engines and operating and maintenance costs are lower. As vehicle emissions regulations become more severe diesel power will become more attractive as a choice. Also, fuel savings will be an important factor in light of the energy crisis.

The bodies are a mix of Leach and Garwood compactors with the major fraction (older also) being the former. Although it appears that the division was shifting to Garwood, the current head of sanitation feels that Leach may be more suitable for his requirements. His experience with the rather elderly Leach inventory supports his conclusion, as the historic maintenance patterns for the Leach equipment are quite favorable.

Reproduced from best available copy.

TABLE 10: COLLECTION FLEET COMPOSITION

SANITATION DIVISION - REFUSE COLLECTION - 1973 FLEET DIRECTORY

EQ. NO.	YEAR & MAKE	MODEL	BODY TYPE	GROSS WEIGHT	IDENTIFICATION OR MOTOR NO.	1973 TAG NO.	TAG COST
9-4250	65 Ford	Custom	Fordor Sedan		5D54C168422	3940*	12.50
9-4501	71 Dodge	Dart	Fordor Sedan		LL41-C1B-298707	3942*	12.50
9-4502	71 Dodge	Dart	Fordor Sedan		LL41-C1B-298708	3943*	12.50
9-5203	49 Ford	F-3	Tire Service	12,000	97HY201431	13877	15.00
9-5501	71 Dodge	D-100	Pickup	12,000	D14AE1S342663	13880	15.00
9-5502	71 Dodge	D-100	Pickup	12,000	D14AE1S342937	13881	15.00
9-5503	71 Dodge	D-100	Pickup	12,000	D14AE1S342934	13882	15.00
9-5504	71 Dodge	D-100	Pickup	12,000	D14AE1S342962	13883	15.00
9-5505	71 Dodge	D-100	Pickup	12,000	D14AE1S342923	13884	15.00
9-6221	62 Ford	F-350	9'Stake Dump	16,000	F35BK252522	13886	30.00
9-6291	68 Ford	F-750	Leach - 16 yd.	24,000	F75EUC17055	13888	75.00
9-6292	68 Ford	F-750	Leach - 16 yd.	24,000	F75EUC17054	13889	75.00
9-6293	68 Ford	F-750	Leach - 16 yd.	24,000	F75EUC17053	13890	75.00
9-6295	65 Ford	F-750	Leach - 16 yd.	24,000	F75KU722765	13891	75.00
9-6296	65 Ford	F-750	Leach - 16 yd.	24,000	F75KU722768	13892	75.00
9-6297	65 Ford	F-750	Leach - 16 yd.	24,000	F75KU722767	13893	75.00
9-6298	65 Ford	F-750	Leach - 16 yd.	24,000	F75KU722766	13894	75.00
9-6388	62 Chev	8503	Leach - 16 yd.	24,000	2C853F111540	13895	75.00
9-6500	69 Dodge	C-800	Garwood - 20 yd.	30,000	4881920542	13899	100.00
9-6501	69 Dodge	C-800	Garwood - 20 yd.	30,000	4881920572	13900	100.00
9-6502	69 Dodge	C-800	Garwood - 20 yd.	30,000	4881920543	13901	100.00
9-6503	70 Dodge	700	Leach - 16 yd.	24,000	D71FLOJ108176	13902	75.00
9-6504	70 Dodge	700	Leach - 16 yd.	24,000	D71FLOJ108175	13903	75.00
9-6505	70 Dodge	700	Leach - 16 yd.	24,000	D71FLOJ108177	13904	75.00
9-6506	71 Dodge	C-800	Garwood - 20 yd.	24,000	M81HM1J304097	13905	75.00
9-6507	71 Dodge	C-800	Garwood - 20 yd.	24,000	M81HM1J304321	13906	75.00
9-6508	71 Dodge	C-800	Garwood - 20 yd.	24,000	M81HM1J304356	13907	75.00
9-6672	64 IHC	1800	Leach - 16 yd.	24,000	FD65050F	13908	75.00
9-6675	64 IHC	1800	Leach - 16 yd.	24,000	FD65043F	13909	75.00
9-6676	64 IHC	1890	Demp-Hoist	20,000	FD65906G	13910	50.00
9-6677	64 IHC	1890	Leach-P.O.-20 yd.	30,000	1890FD56970G	13911	100.00
9-6678	64 IHC	1890	Leach-P.O.-20 yd.	30,000	1890FD56971G	13912	100.00
9-6679	64 IHC	1890	Leach-P.O.-20 yd.	30,000	1890FD56979G	13913	100.00
9-6680	64 IHC	1890	Leach-P.O.-20 yd.	30,000	1890FD56959G	13914	100.00
9-6681	64 IHC	1890	Leach-P.O.-20 yd.	30,000	1890FD56963G	13915	100.00
9-6682	63 IHC	1890	Leach - 20 yd.	30,000	1890FD25279G	13916	100.00
9-6683	63 IHC	1890	Leach - 20 yd.	30,000	1890FD252727	13917	100.00
9-6684	63 IHC	1890	Leach - 20 yd.	30,000	1890FD25274G	13918	100.00
9-6685	63 IHC	1890	Leach - 20 yd.	30,000	1890FD25275G	13919	100.00
9-6686	63 IHC	1890	Leach - 20 yd.	30,000	1890FD25278G	13920	100.00
9-6688	65 IHC	C01700	16' Stake Dump	20,000	S8545911F	13921	50.00
9-6689	66 IHC	1700	Leach - 16 yd.	24,000	416070H666942	13922	75.00
9-6690	66 IHC	1700	Leach - 16 yd.	24,000	416070H669187	13923	75.00
9-6691	66 IHC	1700	Leach - 16 yd.	24,000	416070H666929	13924	75.00
9-6392	62 Chev	8503	Wrecker	24,000	2C853F111596	13897	75.00
9-6391	62 Chev	8503	Semi Tractor	24,000	2C853F111608	13896	75.00
9-6393	62 Chev	8503	Semi Tractor	24,000	2C853F111548	13898	75.00
9-9908	39 Dart		26' Open Stake		B6B	4102	20.00
9-9909	45 Highway		26' Open Stake		5812		20.00

TABLE 11: PACKER BODY DESCRIPTIONS

BODY NO.	MOUNTED ON TRUCK NO.	YEAR & MAKE	MODEL NUMBER	SERIAL NO.
9-B014	9-6298	58 Leach - 16 yd.		17834
9-B015	9-6297	58 Leach - 16 yd.		17840
9-B016	9-6296	58 Leach - 16 yd.		17741
9-B017	9-6295	58 Leach - 16 yd.		17749
9-B019	9-6672	57 Leach - 16 yd.		17612
9-B020	9-6675	57 Leach - 16 yd.		17611
9-B021	9-6689	60 Leach - 16 yd.		18287
9-B022	9-6293	60 Leach - 16 yd.		18290
9-B023	9-6292	60 Leach - 16 yd.		18337
9-B024	9-6291	60 Leach - 16 yd.		18243
9-B025	9-6690	60 Leach - 16 yd.		18260
9-B026	9-6691	60 Leach - 16 yd.		18241
9-B027	9-6388	62 Leach - 16 yd.		18639
9-B029	9-6503	62 Leach - 16 yd.		18635
9-B031	9-6504	62 Leach - 16 yd.		18641
9-B032	9-6505	62 Leach - 16 yd.		18640
9-B033	9-6682	63 Leach - 20 yd.		22425
9-B034	9-6683	63 Leach - 20 yd.		22424
9-B035	9-6684	63 Leach - 20 yd.		22422
9-B036	9-6685	63 Leach - 20 yd.		22465
9-B037	9-6686	63 Leach - 20 yd.		22423
9-B038	9-6677	64 Leach - P.O. - 20 yd.		P-20-452
9-B039	9-6678	64 Leach - P.O. - 20 yd.		P-20-434
9-B040	9-6679	64 Leach - P.O. - 20 yd.		P-20-464
9-B041	9-6680	64 Leach - P.O. - 20 yd.		P-20-447
9-B042	9-6681	64 Leach - P.O. - 20 yd.		P-20-462
9-B043	9-6500	69 Garwood - P. O. - 20 yd.	LP720	D286718
9-B044	9-6501	69 Garwood - P. O. - 20 yd.	LP720	D286715
9-B045	9-6502	69 Garwood - P. O. - 20 yd.	LP720	D286708
9-B046	9-6506	71 Garwood - P. O. - 20 yd.	IP720	D340587
9-B047	9-6507	71 Garwood - P. O. - 20 yd.	IP720	D339593
9-B048	9-6508	71 Garwood - P. O. - 20 yd.	IP720	D340584
9-D001	9-6675	54 Dempster Hoist	303	3577

Any body purchases to be made will be at the 20 cubic yard size. This departure from historical additions is quite logical as the current fleet makes approximately 1.23 trips to the disposal site each day. Presumably, a twenty-five yard packer (holding 1.25 times the capacity of a twenty yard body), would only have to make 1 trip per day. The time savings involved would be coincident with attempts to reduce the work day to eight hours.

The disposal fleet, presented in the last section, is relatively new in comparison with collection vehicles. Furthermore, equipment is continuously being added as necessary from the surplus revenue funds generated by the disposal sites. As long as the disposal sites remain profitable, equipment will be purchased on an as needed basis.

5.6.1: Financing and Cost

All purchases of collection and disposal equipment must be made from revenues set aside from the fees exacted from customers of the system. There is no general fund support of the public solid waste management operation, as it is prescribed to operate as a utility. Consequently, equipment purchases can be made only when the reserve has been built to the point where vehicle or equipment purchase is feasible.

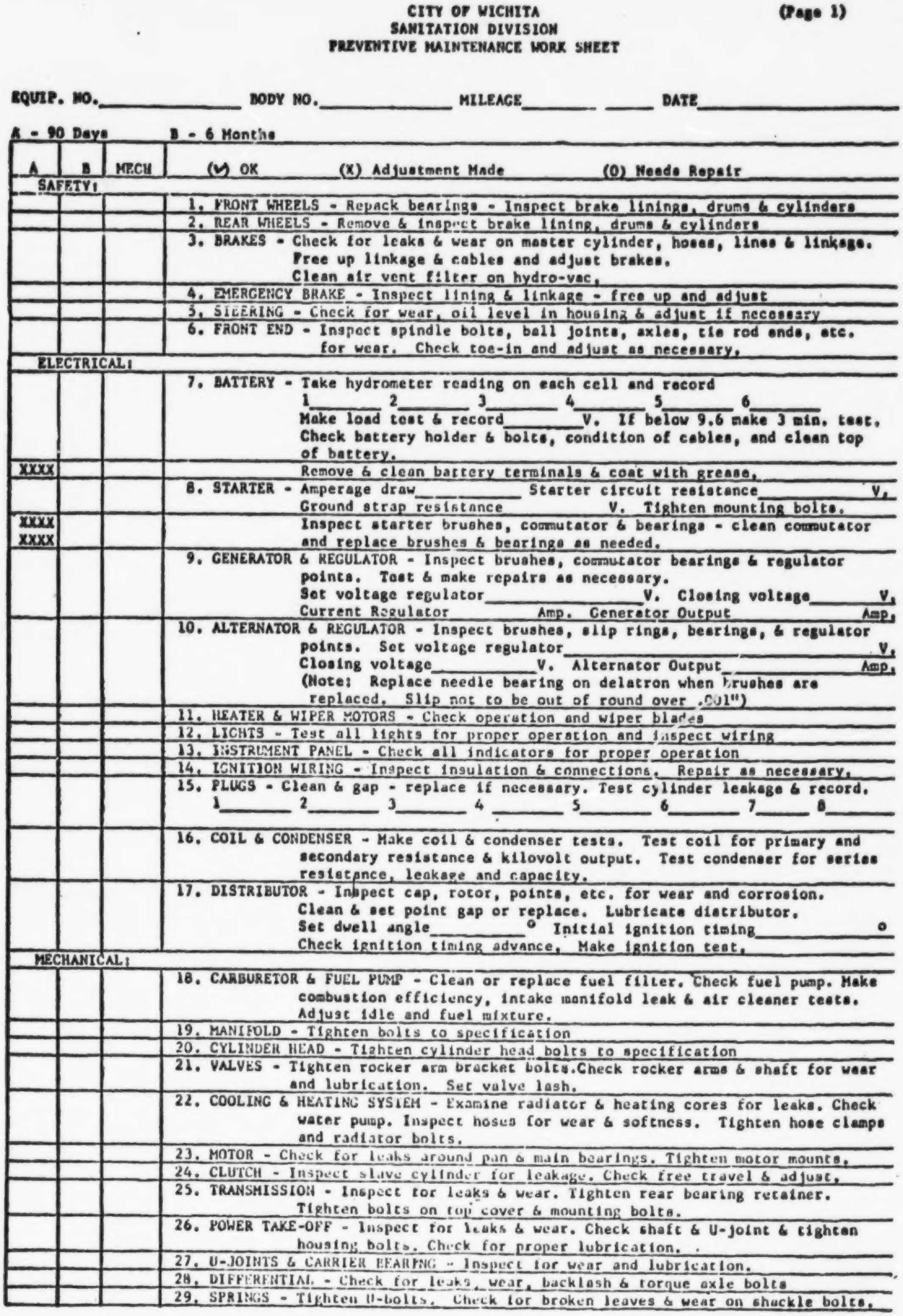
Operating expenses are not yet being formally maintained for each vehicle. However, the current head of sanitation hopes to implement a computerized record keeping system by January of 1974 as a means to display operational data for all division equipment and to identify vehicles that are excessively costly to operate.

During conversation with the division head, the subject of operating and maintenance cost estimates was discussed. Although there is no precise data, he estimates that approximately $1,000 per year per vehicle for every year of age on that vehicle is spent to operate it - i.e., a 5 year old vehicle costs about $5,000 to operate. This rule of thumb may be somewhat high as inspection of the operating budget for 1972 does not result in a clear identification of the total of the factors contributing to vehicle operation and maintenance. However, labor costs significantly contribute to the overall vehicle operating and maintenance expenditures as the staff used to perform repairs was budgeted at $65,269 for 1972 (about $2,610 per operating collection vehicle).

5.6.2: Vehicle Maintenance Policies

A major factor contributing to the relatively long life of collection vehicles is the rigorous preventive maintenance and inspection system used by the Sanitation Division. The division performs essentially all of the maintenance, contracting out machine shop repairs, and employs one supervisor, three mechanics, one serviceman, and one storekeeper. One of the three mechanics works on weekends and services a certain number of trucks so that sufficient fleet strength is available during the week.

The preventive maintenance program is run from a well developed work sheet, presented as Figure 11 . Inspection of this work sheet indicates that an exhaustive vehicle inspection is performed every ninety days with only a few points being scheduled at 6 month intervals. Regular servicing, including motor oil and chassis lubrication, is done according to manufacturer specifications or more frequently, depending on the age and history of the equipment.



CITY OF WICHITA
SANITATION DIVISION
PREVENTIVE MAINTENANCE WORK SHEET

(Page 1)

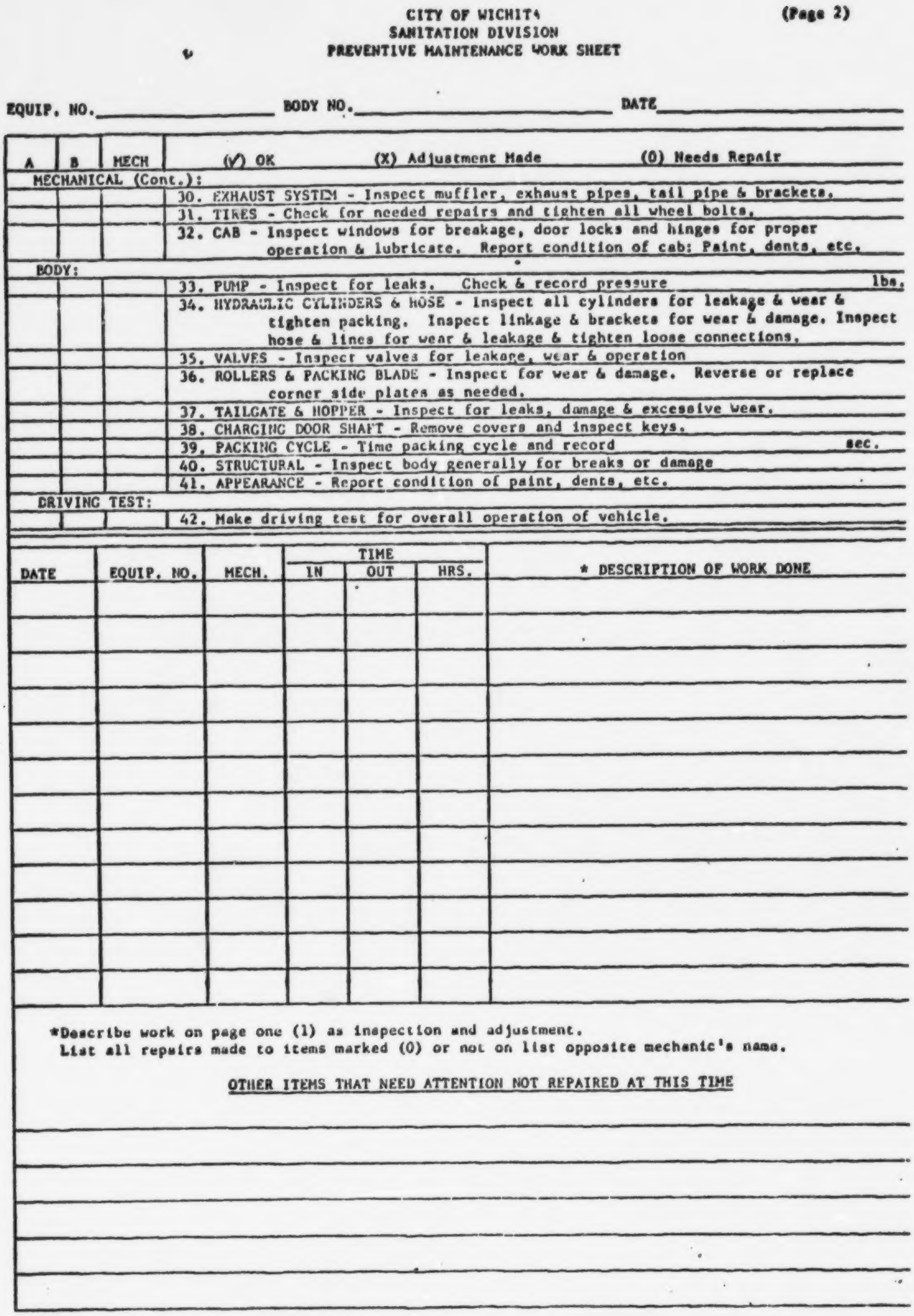
EQUIP. NO.______________ BODY NO.____________ MILEAGE_______ _____ DATE_______________

A - 90 Days B - 6 Months

A	B	MECH	(✓) OK (X) Adjustment Made (O) Needs Repair
SAFETY:			
			1. FRONT WHEELS - Repack bearings - Inspect brake linings, drums & cylinders
			2. REAR WHEELS - Remove & inspect brake lining, drums & cylinders
			3. BRAKES - Check for leaks & wear on master cylinder, hoses, lines & linkage. Free up linkage & cables and adjust brakes. Clean air vent filter on hydro-vac.
			4. EMERGENCY BRAKE - Inspect lining & linkage - free up and adjust
			5. STEERING - Check for wear, oil level in housing & adjust if necessary
			6. FRONT END - Inspect spindle bolts, ball joints, axles, tie rod ends, etc. for wear. Check toe-in and adjust as necessary.
ELECTRICAL:			
			7. BATTERY - Take hydrometer reading on each cell and record 1______ 2______ 3______ 4______ 5______ 6______ Make load test & record________V. If below 9.6 make 3 min. test. Check battery holder & bolts, condition of cables, and clean top of battery.
XXXX			Remove & clean battery terminals & coat with grease.
			8. STARTER - Amperage draw__________ Starter circuit resistance__________V. Ground strap resistance __________V. Tighten mounting bolts.
XXXX XXXX			Inspect starter brushes, commutator & bearings - clean commutator and replace brushes & bearings as needed.
			9. GENERATOR & REGULATOR - Inspect brushes, commutator bearings & regulator points. Test & make repairs as necessary. Set voltage regulator______________V. Closing voltage_______V. Current Regulator __________Amp. Generator Output __________Amp.
			10. ALTERNATOR & REGULATOR - Inspect brushes, slip rings, bearings, & regulator points. Set voltage regulator____________________V. Closing voltage__________V. Alternator Output______________Amp. (Note: Replace needle bearing on delatron when brushes are replaced. Slip not to be out of round over .001")
			11. HEATER & WIPER MOTORS - Check operation and wiper blades
			12. LIGHTS - Test all lights for proper operation and inspect wiring
			13. INSTRUMENT PANEL - Check all indicators for proper operation
			14. IGNITION WIRING - Inspect insulation & connections. Repair as necessary.
			15. PLUGS - Clean & gap - replace if necessary. Test cylinder leakage & record. 1______ 2______ 3______ 4______ 5______ 6______ 7______ 8______
			16. COIL & CONDENSER - Make coil & condenser tests. Test coil for primary and secondary resistance & kilovolt output. Test condenser for series resistance, leakage and capacity.
			17. DISTRIBUTOR - Inspect cap, rotor, points, etc. for wear and corrosion. Clean & set point gap or replace. Lubricate distributor. Set dwell angle__________° Initial ignition timing____________° Check ignition timing advance. Make ignition test.
MECHANICAL:			
			18. CARBURETOR & FUEL PUMP - Clean or replace fuel filter. Check fuel pump. Make combustion efficiency, intake manifold leak & air cleaner tests. Adjust idle and fuel mixture.
			19. MANIFOLD - Tighten bolts to specification
			20. CYLINDER HEAD - Tighten cylinder head bolts to specification
			21. VALVES - Tighten rocker arm bracket bolts. Check rocker arms & shaft for wear and lubrication. Set valve lash.
			22. COOLING & HEATING SYSTEM - Examine radiator & heating cores for leaks. Check water pump. Inspect hoses for wear & softness. Tighten hose clamps and radiator bolts.
			23. MOTOR - Check for leaks around pan & main bearings. Tighten motor mounts.
			24. CLUTCH - Inspect slave cylinder for leakage. Check free travel & adjust.
			25. TRANSMISSION - Inspect for leaks & wear. Tighten rear bearing retainer. Tighten bolts on top cover & mounting bolts.
			26. POWER TAKE-OFF - Inspect for leaks & wear. Check shaft & U-joint & tighten housing bolts. Check for proper lubrication.
			27. U-JOINTS & CARRIER BEARING - Inspect for wear and lubrication.
			28. DIFFERENTIAL - Check for leaks, wear, backlash & torque axle bolts
			29. SPRINGS - Tighten U-bolts. Check for broken leaves & wear on shackle bolts.

FIGURE 11: PREVENTIVE MAINTENANCE WORKSHEET

Reproduced from best available copy.



CITY OF WICHITA
SANITATION DIVISION
PREVENTIVE MAINTENANCE WORK SHEET

(Page 2)

EQUIP. NO.________ BODY NO.________ DATE________

A	B	MECH	(✓) OK (X) Adjustment Made (0) Needs Repair
MECHANICAL (Cont.):			
			30. EXHAUST SYSTEM - Inspect muffler, exhaust pipes, tail pipe & brackets.
			31. TIRES - Check for needed repairs and tighten all wheel bolts.
			32. CAB - Inspect windows for breakage, door locks and hinges for proper operation & lubricate. Report condition of cab: Paint, dents, etc.
BODY:			
			33. PUMP - Inspect for leaks. Check & record pressure ______ lbs.
			34. HYDRAULIC CYLINDERS & HOSE - Inspect all cylinders for leakage & wear & tighten packing. Inspect linkage & brackets for wear & damage. Inspect hose & lines for wear & leakage & tighten loose connections.
			35. VALVES - Inspect valves for leakage, wear & operation
			36. ROLLERS & PACKING BLADE - Inspect for wear & damage. Reverse or replace corner side plates as needed.
			37. TAILGATE & HOPPER - Inspect for leaks, damage & excessive wear.
			38. CHARGING DOOR SHAFT - Remove covers and inspect keys.
			39. PACKING CYCLE - Time packing cycle and record ______ sec.
			40. STRUCTURAL - Inspect body generally for breaks or damage
			41. APPEARANCE - Report condition of paint, dents, etc.
DRIVING TEST:			
			42. Make driving test for overall operation of vehicle.

DATE	EQUIP. NO.	MECH.	TIME			* DESCRIPTION OF WORK DONE
			IN	OUT	HRS.	

*Describe work on page one (1) as inspection and adjustment.
List all repairs made to items marked (0) or not on list opposite mechanic's name.

OTHER ITEMS THAT NEED ATTENTION NOT REPAIRED AT THIS TIME

FIGURE 11 (cont.): PREVENTIVE MAINTENANCE WORKSHEET

5.6.3: Vehicle Replacement Policies

As is evident from preceeding discussion, there is yet no formal vehicle replacement policy although the current division head is now trying to establish a more realistic replacement schedule. The basic reason underlying the present policy is the necessity to postpone equipment replacement until the surplus revenue fund has been built up to the point that vehicles can be purchased. Because of the relatively low revenue excess being realized by the system at this time, vehicle replacement will be performed on a piecewise basis and it will be a number of years before a formal schedule can be constructed.

5.7: Financial Aspects of the Wichita Solid Waste Management System

Since the collection and disposal functions of the Wichita solid waste management system are treated as profit/cost centers, all expenditures must be made from revenues resulting from service fees. There is no cash flow between the solid waste operation and other operating funds (i.e., the General Fund) excepting the most recent transfer from the Revenue Sharing account for collection from indigent families.

Currently, all fiscal policy is generated at the city management and commission level. Even though the division operates as a semi-public utility, its budget is limited by the City Manager who sets a maximum expenditure for the fiscal year. The division then arranges the financial structure of its forthcoming budget to keep within this limit. However, there appears to be considerable dialog between the Sanitation Division Head and the City Manager's office prior to the official specification of the budget lid. This would be expected because of the variable nature of the revenue picture from year to year as the system adds and deletes customers.

In addition to the constraints on expenditures, there is also a constraint on revenues imposed by the City Commission. The Commission is legally obliged to establish the rate structure that is employed by the division for both its residential collection and disposal functions. Although the Sanitation Director prepares the fee schedules based on his costs, the commission has the ultimate authority in the specification of residential rates. There does not appear to be such a constraint on commerical customers but this sector does not represent a major source of revenue.

5.7.1: Sources of Revenue

As pointed out, the sources of revenue for the Sanitation Division result from service fees. The two major sources are from collection and disposal operations with only a minor contribution from special pick-ups. Additionally, the city, not the division, receive revenue from private sector collectors for the inspection and registration of their trucks (at $100/truck/year).

Collection Revenues

The collection revenues are separated into three basic classes: Regular Volume, Limited Volume, and Commerical. The rate structure for residential collection was presented as Table 3. Commercial rates are set according to volume and frequency of collection as well as accessability of the storage containers. These classes are further subdivided as illustrated by Figure 12 which represents the collection revenue picture for 1972. It must be noted that the product of the number of units served times the annual unit cost (4 times the quarterly rate of $8.50) will not equal the revenue because the number of units are those serviced at year end.

The revenue history, by customer class, is presented in Table 12 since 1966. The rate structure for residential customers for these years is presented in Table 13. From Table 12 it is

Reproduced from best available copy.

REGULAR VOLUME SERVICES	1972 ACTUAL REVENUE		
	*UNITS	RATE	REVENUE
Single Residence	15,424	$8.50	$541,216
Duplex	1,040	6.00	16,673
Apartments	1,271	4.00	17,239
Total	17,735		575,128
LIMITED VOLUME SERVICES			
Total Contracts	4,365	5.50	88,489
Additional Containers	2,584	1.50	15,540
Total			104,029
Total Residential Revenue			$680,119
COMMERCIAL			
Trash Contracts	714		115,236
Garbage Contracts	15		2,746
Total			117,982
Special Pickups	1,520		14,914
TOTAL ANNUAL REVENUE			$812,053

*End of year count

FIGURE 12: COLLECTION REVENUES FOR 1972

TABLE 12: COLLECTION REVENUE HISTORY

CLASS / YEAR	1966	1967	1968	1969	1970	1971	1972	1973
Regular Volume Contracts	19,619	21,467	21,427	21,064	19,681	18,196	17,735	17,931
Single Residence	$403,752.00	$429,946.39	$560,203.38	$561,280.90	$533,234.03	$555,198.32	$541,216.00	$530,500.00
Duplex	18,594.00	14,036.15	17,552.95	18,225.27	17,238.37	16,616.20	16,673.00	25,320.00
Apartments	19,393.00	16,324.85	22,732.37	21,120.75	18,995.22	19,672.46	17,239.00	20,368.00
Subtotal	$441,739.00	$460,307.39	$600,488.70	$600,626.92	$569,467.62	$591,486.98	$576,090.00	$576,188.00
Limited Volume Contracts	1,669	1,596	1,547	1,906	3,386	3,895	4,365	4,432
Total Contracts	$26,704.00	$24,236.36	$27,212.70	$25,408.45	$46,904.29	$77,141.08	$88,489.00	$97,504.00
Additional Cans	1,398.00	1,656.00	1,140.00	2,296.00	7,628.00	12,804.00	15,540.00	15,828.00
Subtotal	$28,102.00	$25,892.36	$28,352.70	$27,704.45	$54,532.29	$89,945.08	$104,029.00	$113,332.00
Commercial Contracts	818	876	859	823	759	718	729	749
Trash Contracts	$86,950.68	$96,384.08	$108,978.00	$105,393.02	$99,685.94	$100,120.20	$15,236.00	$124,966.00
Garbage Contracts	5,267.23	3,970.83	4,574.00	4,295.25	3,395.95	3,151.50	2,746.00	2,746.00
Subtotal	$92,217.93	$100,354.91	$113,552.00	$109,688.27	$103,081.89	$103,271.70	$117,982.00	$127,712.00
Special Pick-ups	7,575.78	14,531.20	15,954.81	17,344.20	18,342.24	17,054.75	14,914.00	14,020.00
TOTAL REVENUE	$569,634.71	$601,085.86	$758,348.21	$755,363.84	$745,424.04	$801,758.51	$812,053.00	$831,252.00

TABLE 13: QUARTERLY COLLECTION FEE HISTORY

Interval Class of Service	1966-1967	1968-1970	1971-1972
Regular Volume			
Single Residence	$6.00	$7.50	$8.50
Duplex	4.50	5.25	6.00
Apartments	2.75	3.50	4.00
Limited Volume			
Standard Service	4.00	4.50	5.50
Additional Cans	1.50	1.00	1.50

noted that regular volume revenues change in fits and starts. For 1966, and 1967, little change occurred, while for 1968, there was a significant rise. This rise can be attributed only to the rate change as there was a decline in regular volume customers from 1967 to 1968. The regular volume residential customer revenues were relatively constant through 1969 but dropped slightly in 1970. The small increment in 1971 was again the result of a rate increase and since then, the revenues have declined somewhat. What is clear from Tables 12 and 13, is that relatively constant annual revenues are being maintained by rate adjustments but only at the expense of a loss of subscribers to the service.

The limited volume revenue history is equally as significant. During the years of 1966 through 1969, the revenues from this service option were relatively constant and were not significantly affected by the rate increase in 1968. However, the revenues doubled in 1970 and have been climbing rapidly ever since. The significant rise in revenues (and customers for this service as indicated in Table 14) can be directly attributed to the severe

The history of revenues from the limited volume services is equally as significant. During the years of 1966 through 1969, the revenues from this service option were relatively constant and were not significantly affected by the rate increase in 1968. However, the revenues doubled in 1970 and have been climbing rapidly ever since. The significant rise in revenues (and customers for this service as indicated in Table 12) can be directly attributed to the severe economic recession/depression experienced in Wichita in the late 1969-early 1970 years. Many people apparently decided that they could get along with a one-can collection rather than the five cans collected on a regular volume service. This choice seems to be gaining in popularity although the revenues for additional cans are also rising. The data suggests that a better specification of the two levels of service (keeping carry-out) could be two can and unlimited mixed refuse collection. From the trends in regular and limited volume residential collection, it would appear that there may be an optimum rate structure that could be developed. A customer survey would be invaluable in the development of such a rate structure.

The revenues from commercial accounts have been relatively constant since 1966 but have shown annual fluctuations by as much as 15.1 percent (1971-1972). These revenues also reflect the recession in Wichita but not as severely as in the residential accounts. Unfortunately, the rate structure for commercial customers is not fixed (contracts based on volume, accessability, and frequency of service), thus it is impossible to specify reasons for revenue fluctuation. Table 12 indicates how the number of commercial trash and garbage accounts have been annually changing since 1966.

Disposal Revenues

Table 14 presents the disposal revenues and estimated tonnage history since 1966. The revenues have increased quite rapidly and, for a long time, were rising faster than the actual disposal loading. The returns reached a maximum of $1.74 per ton in 1971, and the decline to $1.67 per ton in 1972 resulted from a shift to packer from non-packer vehicles. Figure 10, presented previously, indicates this trend, especially for the larger packer bodies 15-17, 18-20, 26-30, and 40 cubic yards). The rate schedule, also dicussed in the disposal portion of this chapter, shows that uncompacted refuse is disposed at a significantly greater fee when taken on a tonnage basis.

TABLE 14: DISPOSAL REVENUE HISTORY

YEAR / USER	1966	1967	1968	1969	1970	1971	1972
CITY TRUCKS	$ 18,492.00	$ 18,906.00	$ 24,661.00	$ 33,067.00	$134,209.05	$ 36,282.00	$ 36,988.50
OTHER VEHICLES	131,940.75	123,556.75	162,347.00	216,114.00	226,685.00	290.194.00	374,972.05
TOTAL	$150,433.25	$142,462.75	$187,008.00	$249,181.00	$260,894.05	$326,476.00	$411,961.00
ESTIMATE TONNAGE	NA	155,651	177,175	177,461	175,202	187,939	246,836
REVENUE PER TON	NA	$ .92	$ 1.06	$ 1.40	$ 1.49	$ 1.74	$ 1.67

5.7.2: Expenditures

Expenditures in both the collection and disposal functions are monitored, to some extent, in monthly reports comparing both revenues and expenditures for the month, the same month last year, and accumulatively for both years. Other pertinent data is also presented in this report, as shown in Figure 13. The actual expenditures by class are not broken out in this monthly report, but because of the uncomplicated nature of the system, such detail may not be necessary.

Collection Expenditures

The expenditures by class for the collection function are shown in Table 15 for 1965 to 1972. As is evident, the expenditures for the collection function rose fairly regularly until 1971, when austerity measures were imposed. Both the expenditures for personal services and capital outlay were cut back that year, probably as a result of the fall in revenues for the previous two years. This conclusion is not reflected in the budget request for 1971 which asked for $974,440 and projected expected revenues at $819,540 ($74,115.96 or 10% larger than 1970). It is quite likely that fiscal developments forced the budget trimming after the budget was adopted.

What is also evident from Table 15 is that as far as the collection function is concerned the Sanitation Division went into a holding action in 1971 and has operated at a minimal expenditure level ever since. Capital expenditures have dropped essentially to zero and, while not evident in the tabular data, employee benefits are still being paid out of refuse collection revenues. The only outstanding increment between 1971 and 1972 is a 13.3 percent jump in personal services, which because of a fixed level work force, must be composed of an across-the-board wage hike.

Recent information from the Sanitation Division indicates that there may be a slight relaxation from the stringent budgeting measures imposed in 1971. The operating ratios for 1971 and 1972 were slightly positive and modest profits were made.

REPORTING PERIOD / COLLECTION VARIABLE	THIS MONTH	SAME MONTH LAST YEAR	THIS YEAR TO DATE	LAST YEAR TO DATE
Cubic Yards Refuse Collected	11,809	11,531	145,783	145,198
Average Daily Collection Employment (20) days	59.3	61.5	59.4	58.4
Total Fleet Mileage	27,085	26,952	317,933	349.526
Gallons of Gasoline Used	10,287.0	9,613.3	118,621.5	114,224.2
Gallons of Oil Used	260.5	186.0	3,079.3	2,381.0
Lbs. of Paper Salvage Sold	250,900	310,630	3,553,135	967,960
Receipts from Salvage	501.80	930.54	8,684.18	2,862.06
Receipts from Service Charges	60,618.14	64,393.46	813,097.30	802,704.86
Customer Service Charge Refunds	45.60	80.35	909.70	946.15
Total Receipts for Division	61,074.34	65,243.65	820,871.78	804.620.77
Operating Expense (Inc. Cap. Outlay)	63,427.19	61,628.93	748,671.80	761,347.21
Capital Outlay Expense	0	0	608.00	1.234.99
Receipts as a Per Cent of Expenditures	96.2%	105.8%	109.6%	105.0%

FIGURE 13: MONTHLY REPORT FOR DECEMBER 1972

Reproduced from best available copy.

TABLE 15: COLLECTION FUNCTION EXPENDITURES - 1965 to 1972

COST CLASS / YEAR	1965	1966	1967	1968	1969	1970	1971	1972
Personal Services	$394,712.57	$403.445.54	$462,378.69	$501,296,87	$563,345.00	$573,569.00	$543,889.00	$616,186.00
Contractual Services	34,191.31	37,296.50	33,327.39	37,632.31	66,933.00	73,792.00	75,690.00	74,512.00
Commodities	42,119.45	43,347.49	46,028.57	48,138.04	62.043.00	59,274.00	48,184.00	56,152.00
Capital Outlay	34,729.10	13,751.07	12,464.91	28,331.82	18,239.00	45,586.00	1,235.00	608.00
Social Security	—	—	—	21,624.63	26,477.00			
Retirement	—	—	—	—	28.167.00	93,499.00	91,362.00	(2,208)
Group Insurance	—	—	—	—	17,864.00			
TOTALS	$505.752.43	$497,840.60	$554,199.56	$637,435.00	$783,068.00	$845,720.00	$760.360.00	$745,250.00
Revenues	NA	$569,634.71	$601,085.86	$758,348.21	$755,363.84	$745,424.04	$801,758.51	$812,053.00
Operating Ratio	NA	1.14	1.08	1.19	.96	.88	1.05	1.09
Surplus (Deficit)		$ 71,794.11	$ 46,886.30	$120,913.21	($ 27,704.16)	($100,295.96)	$ 41,398.51	$ 66,803.00

Note, however, that this may be false optimism as the turnabout was made only as a result of the austerity measures coupled with a revenue increase due to a change in the rate structure. The cash position for 1973 has yet to be established but may be better than in 1972 because of the system modifications implemented by the new division head. Further, if the division can keep its expenditures to within reasonable levels, the cash position at the end of 1974 could be quite satisfactory because of the anticipated influx of the $100,000 allocated for the collection of indigent families.

Disposal Expenditures

The disposal operation has been relatively profitable for a number of years. Table 16 presents the annual expenditures by class, the revenues, operating ratios, and surpluses. With exception to 1970 where there was a significant capital outlay, the last five years have shown either respectable profits (1969, 1971, 1972) or have nearly broken even (1968).

The normal trend in personal services is observed as the cost of skilled workers has grown in the past eight years. The remaining three cost categories have not risen as uniformly but do show growth over time.

The surpluses in the disposal operation are not a result of any cost cutting; rather, they result from a competitive fee schedule that attracts a large number of private sector collectors. The convenience of the disposal sites to the major part of the city also contributes to the growing use frequency and favorable fiscal picture.

A change in the current profitability of the disposal function is not expected in the near future. The new disposal site, to be located in the southern section of the city, will be as convenient as the current site. The northern site has many years of use left. A relatively new capital expenditure, a Hyster compacter, will swell the capital expenditures for 1973 but the required revenues have been built up from surpluses accrued during previous years.

TABLE 16: DISPOSAL FUNCTION EXPENDITURES - 1965 to 1972

YEAR COST CLASS	1965	1966	1967	1968	1969	1970	1971	1972
Personal Services	$ 69,682.40	$ 86,465.51	$ 97,095.91	$100,028.00	$112,756.00	$125,222.00	$130,062.00	$164,765.00
Contractual Services	26,733.78	45,347.30	35,190.00	57,361.00	29,981.00	56,873.00	67,725.00	115,262.00
Commodities	10,409.65	15,102.03	12,958.19	10,716.00	20,111.00	13,626.00	20,485.00	26,792.00
Capital Outlay	67,819.79	54,239.07	39,193.04	21,005.00	38,774.00	88,256.00	55,227.00	56,554.00
Retirement	—	—	—	—				
Social Security	—	—	—	—	14,543.00	20,334.00	21,572.00	—
Group Insurance	—	—	—	—				
TOTAL	$174,645.62	$201,153.91	$184,437.14	$189,110.00	$216,165.00	$304.311.00	$295,071.00	$363,373.00
Revenues (Fees)	—	$150,433.25	$142,462.75	$187,008.00	$249,181.00	$260,894.50	$326,476.00	$411,961.00
Operating Ratio	—	.75	.77	.99	1.15	.86	1.11	1.13
Surplus (Deficit)	—	($ 50,720.66)	($ 41,974.39)	($ 2,102.00)	$ 33,016.00	($ 43,416.50)	$ 31,405.00	$ 48,588.00

APPENDICES

Reproduced from
best available copy.

APPENDIX A

SUMMARY FROM ENVIRONMENTAL RESOURCE TASK FORCE

APPENDIX A

SUMMARY

The Environmental Resource Task Force was established in 1970 by the City and County Commissions and Board of Health. The Task Force assumed responsibility for four problem areas: Land-Use, Air Quality, Water Quality, and Solid Waste; sub-committees were formed respectively.

Interim activities have included recommendations on the lime sludge disposal method, prototype zoning ordinance, and backyard trash burning.

While discussion on revising the trash burning was taking place, concern was expressed regarding a total refuse collection system to serve all residential units and the servicing of indigent families. The Environmental Resource Task Force was charged with the responsibility of such a study and of developing initial considerations that would provide for:

1. The collection of all residential trash in the city.
2. The pick-up of all bulky waste.
3. A means for servicing indigent families.

Planned obsolescence and the other factors that relate to our progressive society have created a situation whereby our future is dependent upon our present management of refuse. The national production of solid waste per capita relating only to residential waste is 5.3 pounds per day. In Kansas, it is estimated that four pounds of solid waste per day are produced for every man, woman, and child.

Wichita is no exception in relation to the problem of solid waste. In 1971, environmentalists from the Environmental Health Division of the Department of Community Health made a total of 5,483 contacts directly attributed to refuse. At least three detrimental situations in our community exist that include:

1. Uncollected premise trash and debris.
2. Uncollected premise bulky waste.
3. Open dumping.

Penalties that result from these refuse practices are deterioration in aesthetic values of neighborhoods, potential fire hazards, and the support of fly and rat populations.

The present solid waste collection system in the City of Wichita is an inefficient system or non-system. Block studies show that there is a great degree of repetition of different collectors working nearly every block. One block in particular with 20 dwelling units had 7 different collectors picking up trash every day except Wednesday and Sunday. Five out of the seven collectors only made one stop on this block.

Time studies have pointed out two facts concerning the present collection system in Wichita. First, the routing necessary under this system by a collection truck makes it mandatory for back-tracking and retracing. Secondly, the degree of efficiency and economy of the present collection system is directly related to the distance between stops. As the number of stops per mile increases, the time required per stop decreases.

Realtors and appraisers agree that the existence of solid waste strongly affects the market value of a residence. This includes both waste on the owner's property and waste on neighboring properties. The estimated degree of market devaluation ranges from 5% to 30%.

The solid waste problem in Wichita is becoming more apparent. The "Answer Man" column of the Wichita Eagle-Beacon is a prime example of the public's awareness of this problem. Also, there is an increasing number of editorials and other newsworthy items being presented on this subject. All of these show a feeling of discontent by citizens for facets of our present collection system.

The rate of injury for refuse collectors is high for any city. Collection practices in Wichita lends itself to injuries such as sprained ankles and back sprains. Many cities have recently partially solved this problem by instigating location control of containers and the use of trash can liners.

Information on the collection systems from other cities provides several interesting facts concerning possible deficiencies in Wichita's system of waste collection. First, there is a tendency to encourage either by monetary factors or by ordinance a more uniform container location. Secondly, there is a growing use of trash can liners. Thirdly, cities have found that a more systematic collection process has been more economical for the citizens, easier to control, and more easily developed for special situations such as summer pick-up and bulky waste pick-up.

This information leads to the following recommendations that will improve the system of solid waste collection in Wichita.

1. That a total system of refuse collection be employed by Wichita in which every occupied 1-4 family dwelling unit has its refuse collected on a weekly basis with provisions made for indigent residents.
2. That a consulting engineer be retained to provide detailed and specific information necessary for the implementation of the recommended collection system (collection by all existing qualified licensed private industry operators and the Sanita-

tion Division on an assigned area basis).

3. That polyethylene trash can liners be used in a test area to determine their attributes as they relate to our situation in the City of Wichita.

APPENDIX B

SOLID WASTE ORDINANCE

APPENDIX B

CITY OF WICHITA, KANSAS

REFUSE ORDINANCE

Reproduced from best available copy.

AN ORDINANCE RELATING TO GARBAGE, TRASH OR RUBBISH, SALVAGE MATERIALS, AND DEAD ANIMALS; DEFINING CERTAIN TERMS: PROVIDING FOR AND REGULATING THE ACCUMULATION, COLLECTION, AND DISPOSAL OF SUCH REFUSE; CHARGES AND FEES FOR THE COLLECTION AND DISPOSAL OF SUCH REFUSE; PROVIDING RULES AND REGULATIONS FOR SUCH PURPOSES: PROVIDING PENALTIES FOR VIOLATION THEREOF.

CODE OF THE CITY OF WICHITA
CHAPTER 7.08

Sections:

7.08.010 Definitions.
7.08.020 Duty of commercial establishments to provide garbage containers; specifications.
7.08.030 Commercial garbage to be placed in containers.
7.08.040 Collection and removal of commercial garbage by city or licensed collectors only.
7.08.050 Charges for commercial garbage collection service by city.
7.08.060 Frequency of collection and disposal of commercial garbage.
7.08.070 Draining, wrapping and storing of residential garbage; frequency of collections and time of disposal.
7.08.080 Supervision of collection and disposal of salvage materials.
7.08.090 Supervision of collection and disposal of rubbish, trash and garbage.
7.08.100 Refuse--Collection and disposal by city and charges therefor.
7.08.110 Refuse storage containers for residential accumulations.
7.08.120 Storage of rubbish or trash on premises other than residential.
7.08.130 Depositing or spilling refuse on streets, public grounds, etc.
7.08.140 Vehicle operation requirements.
7.08.150 License required.
7.08.160 Application for license.
7.08.170 License fee and term of license.
7.08.180 Licensed vehicles--Construction, equipment required for collection of commercial garbage.
7.08.190 Same - Construction, equipment required for collection of rubbish, trash, by licensed independent refuse collectors.
7.08.200 Same -- Type of construction and equipment required for the collection of rubbish, trash, salvage materials and waste materials produced by construction, remodeling or demolition of residence , and commercial or industrial establishments.
7.08.210 Same -- Type of construction and equipment required for collection of tree trimmings, limbs or logs.
7.08.220 Conditions precedent to issuance of license.
7.08.230 Issuance of license.
7.08.240 Registration tags for vehicles.
7.08.250 Transferability of license.
7.08.260 Revocation of licenses; right of appeal.
7.08.270 Disposal requirements.
7.08.280 Fees for disposal services performed by city.
7.08.290 Dead animals -- Definitions.
7.08.300 Collection, collection fees, and disposal of small dead animals.
7.08.310 Rules and regulations.
7.08.320 Accumulations not in conformance with chapter declared nuisance.
7.08.330 Penalty.

7.08.010 Definitions. The following terms used in this chapter shall have the meanings respectively ascribed to them in this section:

(a) COMMERCIAL GARBAGE shall mean all garbage produced by grocery stores; produce markets; restaurants;, schools, public, private or parochial; hospitals; or any commercial or other establishment that processes, sells or serves food or food products.

(b) DIRECTOR OF COMMUNITY HEALTH shall mean the director of the Wichita-Sedgwick County department of community health, or his authorized representative.

(c) GARBAGE shall be construed to mean all organic waste or residue of animal, fruit, vegetable or food material from kitchens and dining rooms, or from the preparation or dealing in or storage of meats, fowl, fruits, grains, or vegetables.

(d) RUBBISH OR TRASH shall be construed to mean all refuse such as paper, tin cans, bottles, glass containers, rags, ashes, lawn trimmings, tree trimmings, tree branches, limbs, tree trunks and stumps, and waste materials from premises including that produced from remodeling or construction, paper sacks, boxes, packing materials and like materials from dwellings, and business, commercial or industrial establishments and the offices thereof, except the following: (1) garbage; (2) sewage; (3) dirt, rock, concrete or masonry materials; (4) accumulations from mud traps and settling basins; (5) dead animals or animal excrement; and (6) salvage materials.

(e) SALVAGE MATERIALS shall be construed to be waste paper, scrap metals, building materials, or any other type of waste material that has a value to the producer, owner or occupant of the premises upon which it is produced or stored over and above the actual cost of collection and disposal.

(f) SANITATION DIRECTOR shall mean the sanitation director of the sanitation division of the department of public works of the city, or his authorized representative.

(g) SANITATION DIVISION shall mean the sanitation division of the department of public works of the city.

(h) CENTRAL INSPECTION DIVISION shall mean the central inspection division of the department of public works of the city.

(i) SUPERINTENDENT OF CENTRAL INSPECTION shall mean the superintendent of the central inspection division of the department of public works of the city or his authorized representative.

(j) MAINTENANCE DIVISION shall mean the maintenance division of the department of public works of the city.

(k) LICENSED INDEPENDENT REFUSE COLLECTOR shall mean any collector of rubbish, trash or residential garbage from any premise, residential, commercial or industrial, except that which is occupied by him, and for which a fee is charged for the services performed. (Ord. No. 27-569, Section 1.)

7.08.020 Duty of commercial establishments to provide garbage containers; specifications. It shall be the duty of every commercial establishment on whose premises garbage is produced for collection and not for disposal by garbage grinders to provide and at all times to keep on the premises in a convenient place for collection, proper, suitable and adequate liquid-tight containers of a kind to be approved by the director of community health. Each such container shall be closed by a water-tight and fly-tight cover at all times except when garbage is being deposited therein. (Ord. No. 27-569, Section 1.)

7.08.030 Commercial garbage to be placed in containers. All commercial garbage produced on the premises of commercial establishments, as set forth in subsection (a) of Section 7.08.010 of this chapter, shall be placed in the container so required. It shall be unlawful to place or deposit any commercial garbage for collection in trash containers, incinerators, unless the incinerator is of a smokeless and odorless type supplied by auxiliary fuel and approved by the Wichita fire department and the Wichita-Sedgwick County department of community health, or any other place except in approved commercial garbage containers. (Ord. No. 27-569, Section 1.)

7.08.040 Collection and removal of commercial garbage by city or licensed collectors only. All commercial garbage accumulated in containers for collection shall be collected and removed only by the sanitation division or by a licensed garbage collector with equipment as required by Section 7.08.180. It shall be unlawful for any other person to use the streets, alleys or avenues of the city for the purpose of transporting commercial garbage thereover, or to collect and remove commercial garbage from any establishment within the city limits. It shall be unlawful for any unauthorized person to open, interfere with, damage or destroy any commercial garbage container or the contents thereof. (Ord. No. 27-569, Section 1.)

7.08.050 Charges for commercial garbage collection service by city. The board of city commissioners hereby authorizes the sanitation division to charge for the collection and disposal of commercial garbage. The charges for the collection and disposal of commercial garbage by the city shall be determined by the sanitation director and shall be based upon the volume of garbage, frequency of collection, and accessibility to the place of collection. (Ord. No. 27-569, Section 1.)

7.08.060 Frequency of collection and disposal of commercial garbage. All commercial garbage shall be collected and removed at least twice a week and disposed of in a manner and at a site approved by the director of community health. Accumulations of commercial garbage constituting a nuisance shall be collected at more frequent intervals as required by the director of community health. Disposal of commercial garbage shall be made within sixteen hours after collection is made. (Ord. No. 27-569, Section 1.)

7.08.070 Draining, wrapping and storing of residential garbage; frequency of collections and time of disposal. All garbage produced by residential units and not disposed of by garbage grinders shall be drained of all excess liquids and securely wrapped in paper, cloth or other material and placed in an approved container so that the outside of the wrapper will remain dry until collection is made. It shall be the duty of each owner or occupant of residential premises on which garbage is produced for collection to provide and maintain at his own expense, liquid-tight containers of a kind to be approved by the director of community health, with a fly-tight and water-tight lid or cover for storage of wrapped garbage. It shall be unlawful to place or deposit any garbage in trash burners, incinerators or in any other place except in the above-described containers, unless in an incinerator of a smokeless and odorless type supplied by an auxiliary fuel and approved by the Wichita fire department and Wichita-Sedgwick County department of community health. The container used for storage or wrapped garbage may also be used for the storage of trash and rubbish. All residential garbage stored in containers as described in this section shall be collected from the premises at least every seven days and removed to a disposal site approved by the director of community health. Disposal shall be made within sixteen hours after collection is made. (Ord. No. 27-569, Section 1.)

7.08.080 Supervision of collection and disposal of salvage materials. The transportation of all salvage materials over the streets and alleys of the city shall be under the supervision of the superintendent of the central inspection division. The provisions of this chapter relating to the hauling of refuse shall, insofar as the same may be applicable, govern such transportation. (Ord. No. 27-569, Section 1.)

7.08.090 Supervision of collection and disposal of rubbish, trash and garbage. The collection and subsequent disposal of all rubbish, trash and garbage in the city shall be under the supervision of the sanitation director. (Ord. No. 27-569, Section 1.)

7.08.100 Refuse -- Collection and disposal by city and charges therefor. The sanitation division, with the approval of the board of city commissioners is hereby authorized to engage, with the equipment and facilities of the city, in the collection and disposal of any refuse in any part of the city. The sanitation director shall prepare a schedule of charges for regular volume and limited volume collections and disposal of refuse from residential premises which shall be effective upon approval by the board of city commissioners. When such charges are approved, they shall be payable to the city for the cost of the services performed by the sanitation division, subject, however, to change by the sanitation director upon the approval of the board of city commissioners. The charges for the collection and disposal of refuse from commercial establishments shall be determined by the sanitation director and shall be based upon the volume of refuse, frequency of collection, and accessibility to the place of accumulations. The issuance of a license to private persons for the collection and disposal of refuse under the further provisions of this chapter shall in no manner prevent or restrict the sanitation division from engaging in the collection and disposal of refuse as herein authorized. (Ord. No. 27-569, Section 1.)

7.08.110 Refuse storage containers for residential accumulations. (a) Owners or occupants of all premises on which is located one or more dwellings (a dwelling is any building, mobile home, house-trailer or portion thereof which is designed or used for residential purposes) who produce rubbish, trash or wrapped garbage shall maintain, at their own expense, liquid-tight containers with a fly-tight and water-tight lid or cover for proper storage at all times of all rubbish, trash or garbage produced on the premises; PROVIDED, that combustible trash or rubbish that is burned in an approved type of trash burner or incinerator shall be excluded from this section; PROVIDED FURTHER, that no garbage or noncombustible trash may be deposited in trash burners or incinerators. Tree trimmings or lumber not stored in containers shall be stored in such a manner as to prevent the harborage of rats. The enforcement of storage container requirements shall be under the supervision of the Director of Community Health.

(b) Owners or occupants of premises on which are located one or more dwellings, who produce rubbish, trash or wrapped garbage for collection service by the City or any licensed collector, shall at all times, at their own expense, provide and maintain on their premises suitable thirty-gallon liquid-tight containers with a fly-tight and water-tight lid or cover, of a type approved by the Director of Community Health; PROVIDED, that in lieu of such thirty-gallon containers a containerized system using attachable refuse containers of a type approved by the Director of Community Health may be utilized. Each thirty-gallon container, when filled with rubbish, trash or wrapped garbage, shall not have an overall weight in excess of seventy-five pounds per thirty-gallon container, including both the container and the contents thereof. All accumulations placed in containers for collection shall be readily accessible, and outside of residences or other structures on the premises at the time of collection. Licensed collectors must report to the Director of Community Health any person requesting regular collection service when the person does not use suitable containers as specified herein.

All rubbish, trash or wrapped garbage, other than tree trimmings accumulated on the premises, shall be placed in containers; PROVIDED, however, that no offal, dead animals or animal excrement shall be placed in containers. Tree trimmings or branches for collection shall be not more than four feet in length, tied in bundles and placed by the refuse containers.

The collection of remodeling or construction wastes, deed animals and animal excrement shall not be deemed to constitute a part of the regular residential collection service; PROVIDED, however, such refuse may be collected as a special pick up service. The charge for such service, when performed by the City, shall be determined by the Sanitation Director and shall be based on the volume of refuse to be collected. (Ord. No. 30-865, Section 1.)

7.08.120 Storage of rubbish or trash on premises other than residential. Owners or occupants of premises other than residential, upon which rubbish or trash is produced, shall, at all times, at their own expense, provide and maintain on their premises suitable metallic containers with a proper lid or cover for proper storage, at all times, of all rubbish or trash produced on the premises. In the event the rubbish or trash shall be of such quantity as to make it impracticable to place the same in containers, it shall be the duty of the owner, lessee, occupant or the person in charge of, or in possession of such premises to cause all such rubbish or trash to be accumulated and stored in a building, or in a room or part of a building, or in a container, approved for such purposes under the building code of the city, this code and other ordinances relating to health and the prevention of fire. (Ord. No. 27-569, Section 1.)

7.08.130 Depositing or spilling refuse on streets, public grounds, etc. (a) DEPOSITING ON STREETS, ETC. It shall be unlawful for any person to dispose of any rubbish, trash, garbage, waste materials produced from construction remodeling or demolition, dirt, rock, concrete, masonry materials or salvage materials by depositing or dumping the same in or upon any street, avenue, boulevard, alley, park or public grounds or along the bank of, or in, any river, stream, drainage canal, drainage ditch or natural watercourse, or other place within the city limits, except at such dumping and disposal places or grounds as shall be designated for the purpose by the sanitation director.

b) PERMITTING LOADS TO SCATTER OR SPILL. It shall be further unlawful for any person transporting or hauling any rubbish or trash, garbage, waste materials produced from construction, remodeling or demolition, dirt, rock, concrete, masonry materials or salvage materials over or along the streets, avenues, boulevards, alleys or other public ways of the city, to scatter or spill such materials upon, or to litter the streets and public ways of the city with the same, or to permit, allow or suffer any rubbish, trash, garbage, waste materials produced from construction, remodeling or demolition, dirt, rock, concrete, masonry materials or salvage materials to be spilled or scattered, or to remain upon the streets, avenues, boulevards, alleys or other public ways of the city. (Ord. No. 27-569, Section 1.)

7.08.140 Vehicle operation -- Requirements. All vehicles transporting or hauling rubbish, trash or garbage within the city shall, at all times when in motion, either partially or fully loaded, be securely and completely covered in such a manner that the contents being transported will not be allowed or permitted to escape from the vehicle. All trucks or trailers transporting or hauling rubbish, trash or garbage, when in motion, either partially or fully loaded, shall be securely and completely covered and shall be equipped with a tail gate firmly secured and fastened in a closed position in such a manner that no rubbish or trash, garbage or debris will escape from the vehicle. All vehicles, trucks or trailers transporting or hauling waste materials produced from construction, remodeling or demolition within the city shall, at all times when in motion, either partially or fully loaded, be securely and completely covered or otherwise secured in such a manner that the contents being transported will not be allowed or permitted to escape from the vehicle. All vehicles transporting or hauling dirt, sand, rock, concrete or masonry materials within the city, when in motion, either partially or fully loaded, shall have front boards, side boards and a tail gate firmly secured and fastened in a closed position in such a manner that no materials above-described being transported will escape from the vehicle. (Ord. No. 27-569, Section 1.)

7.08.150 License required. It shall be unlawful for any person to collect, transport or haul over any of the streets or alleys of the city or dispose of any rubbish, trash or garbage accumulated in the city without a proper license for such collection and disposal; provided, however, that this section shall not be construed to apply to the sanitation division or to other divisions of the city, or local governments, nor to persons who collect and transport rubbish or trash and wrapped garbage produced on residential premises occupied by them; provided that such persons shall comply with all regulations set forth in this chapter and prescribed by the sanitation director for the transportation of refuse over the streets and alleys. Collection and removal of rubbish, trash or garbage from commercial premises, and rubbish or trash and wrapped garbage from any residential premises other than the property occupied by the person making such removal and collection, shall require a license and equipment as provided for by this chapter. Collection and removal of salvage of materials and waste materials produced by construction, remodeling or demolition of residences, and commercial or industrial establishments shall require a license and equipment as provided for by this chapter. (Ord. No. 27-569, Section 1.)

7.08.160 Application for license. Each person required by this chapter to be licensed to collect or remove rubbish, trash, garbage or waste materials within the city shall file with the city treasurer an application for such license in such form as shall be prescribed by the city treasurer. (Ord. No. 27-569, Section 1.)

7.08.170 License fee and term of license. Each applicant for a license required by this chapter for the collection of commercial garbage shall pay a fee of one hundred dollars, in advance, for each vehicle to be licensed. Each applicant for a license required by this chapter for the collection of rubbish, trash and residential garbage as an independent refuse collector shall pay a fee of one hundred dollars, in advance, for each vehicle to be licensed. Each applicant for any other license required in this chapter for the collection and removal of rubbish, trash, garbage or waste materials shall pay a fee of twenty-five dollars, in advance, for each vehicle to be licensed. The term of the license shall be for a period of one year commencing March 1 and expiring February 28 of the next year. No license fee shall be pro-rated or refunded. Any license renewal must be made by April 1, after which date a ten percent per month penalty will be assessed. (Ord. No. 27-569, Section 1.)

7.08.180 Licensed Vehicles -- Construction, equipment required for collection of commercial or residential garbage. The body of each vehicle to be licensed for the collection and removal of commercial or residential garbage shall be of all metal construction with all joints being welded so that the bed is liquid-tight. The body shall be a totally enclosed compactor-type collection body. If the body is equipped with side loading doors, they are to be kept closed at all times except when garbage is being deposited therein. No garbage or refuse may be transported or hauled in the hopper of a compactor-type body without a hopper cover or door being in a closed position. The body of the vehicle shall be so constructed that, when loaded, motion of the vehicle will not cause liquid or garbage to escape. (Ord. No. 29-592, Section 2.)

7.08.190 Licensed Vehicles -- Type of construction and equipment required for collection of rubbish or trash by licensed independent refuse collectors. All vehicles to be licensed by an independent refuse collector for the collection and removal of rubbish or trash under the provisions of this ordinance shall be of all-steel, water-tight construction and totally enclosed. All doors in the body of such vehicle shall be kept closed when the vehicle is moving, and at all times except when refuse is being deposited therein or removed therefrom. (Ord. No. 29-592, Section 3.)

7.08.200 Same -- Type of construction and equipment required for the collection of rubbish, trash, salvage materials and waste materials produced by construction, remodeling or demolition of residences, and commercial or industrial establishments. All vehicles to be licensed for the collection of rubbish, trash, salvage materials or waste materials produced by construction, remodeling or demolition of residences, and commercial or industrial establishments, shall be constructed and equipped as follows:

(1) Construction of the vehicle shall be such that rubbish, trash, salvage materials and waste materials loaded therein or transported thereby shall be securely contained.

(2) All such vehicles shall be equipped with a permanently attached cover either of rigid construction or of a canvas-like material with suitable fasteners so that the cover will remain securely in place and permit no rubbish, trash, salvage materials or waste materials to escape at any time.

(3) All vehicles to be licensed under this section shall be equipped with a tail gate of rigid construction and of a height equal to the sides of the bed, which, when closed securely, shall hold and contain rubbish, trash and waste materials. (Ord. No. 27-569, Section 1.)

7.08.210 Same -- Type of construction and equipment required for collection of tree trimmings, limbs or logs. All vehicles licensed under this chapter to be used by tree trimmers shall have the proper equipment necessary to secure or contain tree trimmings, limbs or logs being hauled on such vehicles. All tree trimmings hauled by such vehicles shall be loaded so that no part of the load extends beyond the sides of the bed and so that branches hanging over the rear of the bed shall be loaded with ample clearance above ground level. (Ord. No. 27-569, Section 1.)

7.08.220 Conditions precedent to issuance of license. No license to collect or remove rubbish, trash or garbage within the city shall be issued until:

(1) The vehicle to be licensed and operated under the license applied for shall be inspected and approved by the police department as to compliance with this code and other city ordinances and with state statutes relating to equipment and operation of motor vehicles.

(2) The vehicle to be licensed and operated under the license applied for shall be inspected and approved by the central inspection division as being properly constructed and equipped for compliance with the provisions of this chapter. (Ord. No. 27-569, Section 1.)

7.08.230 Issuance of license. The city treasurer, upon recommendation of the superintendent of central inspection, shall issue a license to persons qualified under the provisions of this chapter to collect or remove rubbish, trash or garbage within the city in a manner and upon the conditions of this chapter. (Ord. No. 27-569, Section 1.)

7.08.240 Registration tags for vehicles. Upon issuance of a license to collect or remove rubbish, trash or garbage within the city, required under the provisions of this chapter, the city treasurer shall deliver to the licensee two metal registration tags bearing the number of the particular license; one tag shall be securely attached to each side of the vehicle by the licensee in such a position that it shall be at all times clearly visible. (Ord. No. 27-569, Section 1.)

7.08.250 Transferability of licenses. No license to collect or remove rubbish, trash or garbage within the city, issued under the provisions of this chapter, shall be assigned or transferred by the person holding the same as licensee. Any such licensee may, however, change the registration of the vehicle operated under his license upon the following conditions:

(1) The vehicle to be newly registered shall be inspected and approved by the police department and the central inspection division in the manner provided in Section 7.08.220 of this chapter.

(2) The registration of the vehicle theretofore operated under such license shall be surrendered.

(3) The sum of one dollar, as a fee for the transfer of registration of such vehicle, shall be paid by the licensee to the city treasurer. (Ord. No. 27-569, Section 1.)

7.08.260 Revocation of licenses; right of appeal. If after seven days' notice of requirements, any licensee shall fail to comply with any provisions of this chapter or other city ordinance, the superintendent of central inspection may, upon forty-eight hours' written notice to such licensee, revoke and cancel such license to collect and remove rubbish, trash or garbage within the city. Any licensee feeling aggrieved at such revocation may appeal, within five days, the action of the superintendent of central inspection to the board of commissioners of the city. In no event will any portion of the license fee be refunded to the licensee upon revocation of such license. (Ord. No. 27-569, Section 1.)

7.08.270 Disposal requirements. The issuance of a license to collect or remove rubbish, trash or garbage within the city required by this chapter shall carry with it the right of the licensee to dispose of trash, rubbish, garbage or debris at any public disposal site operated by the city, subject to any charges the city may levy for disposal and to any such rules and regulations as shall be in effect at such disposal sites. All trash, rubbish or garbage collected by individuals, licensed haulers, departments of the city, or any other person, must be disposed of at a site, or sites, approved by the director of community health. (Ord. No. 27-569, Section 1.)

7.08.280 Fees for disposal services performed by city. The sanitation director shall prepare a schedule of fees for the disposal of refuse, which shall be effective upon approval by the board of city commissioners. When such fees are approved, they shall be payable to the city for disposal services performed by the sanitation division; subject, however, to change by the sanitation director upon approval of the board of city commissioners. (Ord. No. 27-569, Section 1.)

7.08.290 Dead animals--Definitions. (a) SMALL DEAD ANIMALS shall be construed to mean dead animals such as dogs, cats, rabbits, squirrels, skunks, opossums, rodents and fowl.

(b) LARGE DEAD ANIMALS shall be construed to mean dead animals such as horses, cows, ponies, calves, sheep, goats and swine. (Ord. No. 27-569, Section 1.)

7.08.300 Collection, collection fees, and disposal of small dead animals. The maintenance division is hereby authorized to engage, with the equipment and facilities of the city, in the collection and disposal of small dead animals in the city and collection of fees thereof. A fee of two dollars shall be assessed for each collection of small dead animals made from an animal clinic, hospital or similar businesses dealing in care of small animals. The collection and disposal of small dead animals by the maintenance division shall not prohibit the owner or the person in possession thereof from disposing of such animal or animals in a manner approved by the director of community health; provided, however, it shall be unlawful for any person, animal clinic, hospital or similar businesses, to dispose of any dead animal by depositing such animal in garbage or trash containers, incinerators, or upon any public property or other places within the city limits, except at such disposal places as approved by the director of community health.

The collection and disposal of large dead animals shall be in a manner approved by the director of community health. (Ord. No. 28-881, Section 1; prior Ord. No. 27-569, Section 1.)

7.08.310 Rules and regulations. The sanitation director and the director of community health are authorized to make additional rules and regulations pertaining to the accumulation, collection and disposal of rubbish or trash, garbage, salvage materials or dead animals as may be deemed advisable and necessary for such purposes and not inconsistent with the provision of this chapter, subject to the approval of the board of city commissioners. (Ord. No. 27-569, Section 1.)

7.08.320 Accumulations not in conformance with chapter declared nuisance. The accumulation or storage of rubbish or trash, garbage, salvage materials and dead animals not in conformance with the provisions of this chapter shall be deemed to constitute a nuisance affecting the public health and welfare of the inhabitants of the city and shall be a violation of this chapter. (Ord. No. 27-569, Section 1.)

7.08.330 Penalty. Any person violating any of the provisions of this chapter, or the rules or regulations made pursuant thereto, shall, upon conviction thereof, be punished by a fine of not more than two hundred dollars or be imprisoned for not more than sixty days, or be both so fined and imprisoned at the discretion of the court. (Ord. No. 27-569, Section 1.)

(Revised & Adopted December 9, 1969)

μσ916